ORDER NO. SD8005-1753

Service Manual

FM/AM Stereo Receiver

SA-616

[FE], [ES]

Areas

[FE] is available in far East PX.
[ES] is available in European Military.

For additional information, please refer to the service manual for Model No. SA-616 [M], [MC]

Notes:
- * This service manual included only the change of the **SA-616 [M], [MC]** service manual (ORDER NO. SD8004-1740).
- * When servicing model **SA-616 [FE or ES]**, this service manual and **SA-616 [M], [MC]** (ORDER NO. SD8004-1740) service manual should be used together.

CHANGES

■ REPLACEMENT PARTS LIST

Ref. No.	Change of Part No. SA-616 (ORDER NO. SD8004-1740)	➡ SA-616 [FE], [ES]	Part Name & Description	Per Set (Pcs.)		Remarks
			TRANSFORMER			
T701	SLT5R43	SLT5R45	Transformer, Power Source	1		○
			FUSES			
F1	XBA1F80NU14	XBA2E100NS1	Fuse, Power Source, 10A (250V)	1		
F3	Addition	XBA2C40TR0	Fuse, Power Source, 4A (250V)	1		
			SWITCHES			
S10	SSL133	ESL21210S	Switch, Power Source	1		
S11	Addition	ESE37200	Switch, Voltage Adjuster	1		
			CAPACITORS			
C625, 626	ECQM1473KZ [M] ECQM1H104KZ [MC]	ECQM1473KZ	Polyester, 0.047μF, 125V ± 10%	1		
C635, 636	ECQM1H104KZ	Deletion	Polyester	0		
C727	ECKDMY103PF	Deletion	Ceramic	0		
C731, 732	Addition	ECKDKC103PF	Ceramic, 0.01μF, 400VAC, $^{+100}_{-0}$%	2		
			CABINET and CHASSIS PARTS			
42	RJA9Y	RJA52ZB	AC Cord	1		
43	SGP2330B	SGP2330–1B	Rear Panel	1		○
53	Addition	SJFA5101	Holder, Fuse	1		
54	Addition	SUV453	Cover, Voltage Adjuster	1		

Technics

Panasonic Tokyo
Matsushita Electric Industrial Co., Ltd.
17-15, 6-chome, Shinbashi, Minato-ku, Tokyo 105 Japan

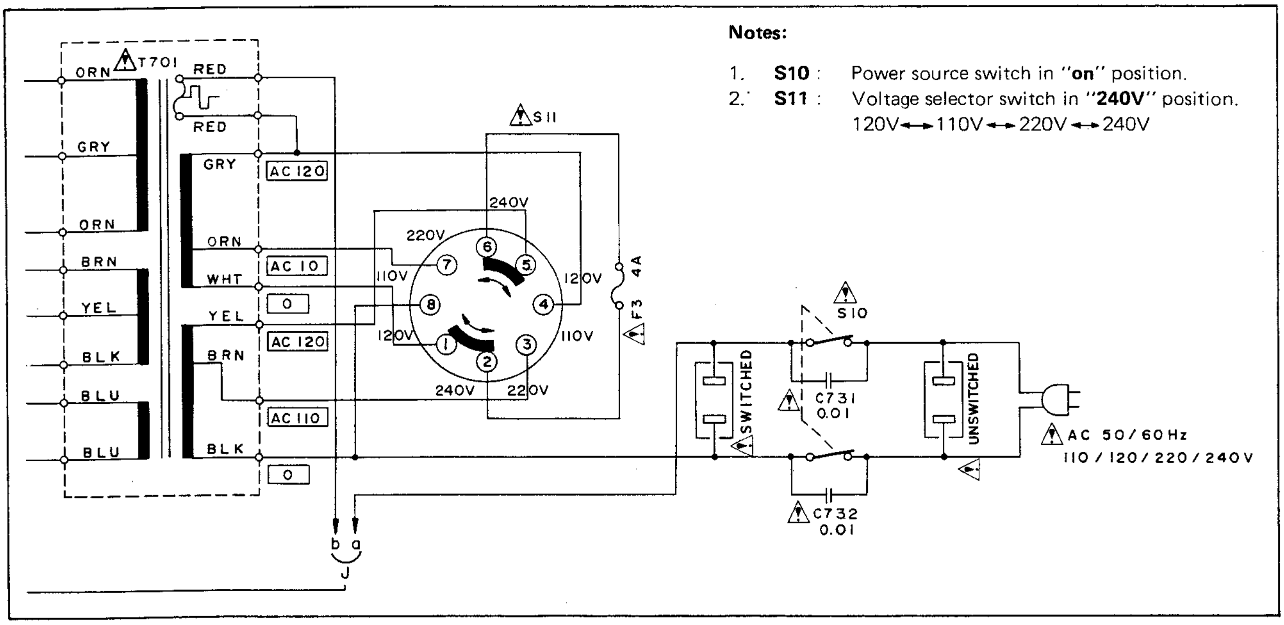
Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

SA-616

Ref. No.	Change of Part No. SA-616 (ORDER NO. SD8004-1740)	→ SA-616 [FE], [ES]	Part Name & Description	Per Set (Pcs.)		Remarks
			SCREWS			
(84)	Addition	XSN3+6BVS	Screw, ⊕ 3 x 6 (Voltage Adjuster)	2		
(85)	Addition	XWA3BFZ	Washer, Spring ϕ 3	2		
(86)	Addition	XTN3+8B	Screw, ⊕ 3 x 8 (Fuse Holder)	1		
			ACCESSORIES			
A2	Addition	RJP75	Plug Adaptor, Power Source	1		
A3	Addition	RJP74—1	Plug Adaptor, Power Source	1		
			PACKING PARTS			
P4	SPG2639 [M]	SPG2639	Carton Box	1		○
	SPG2641 [MC]					
P5	SQF10457	SQF10463	Instructions Book, Printed Matter	1		○
	SQF10459					

■ CHANGE OF SCHEMATIC DIAGRAM

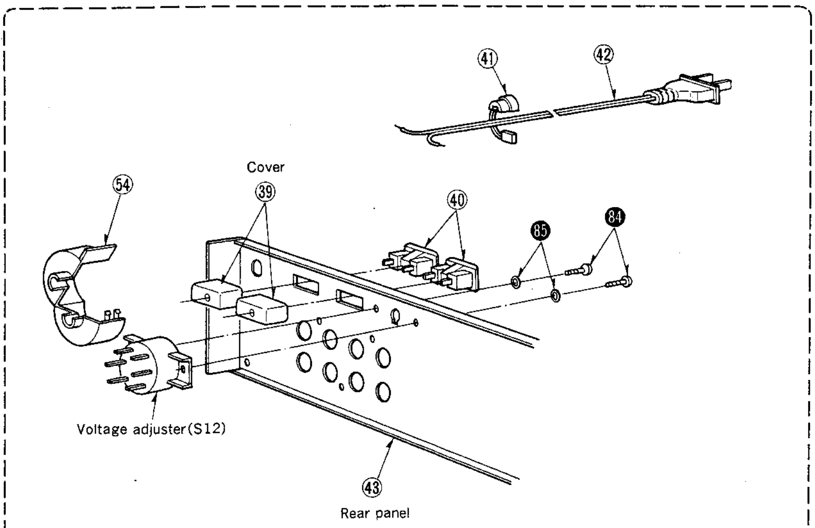
- **Power source circuit**

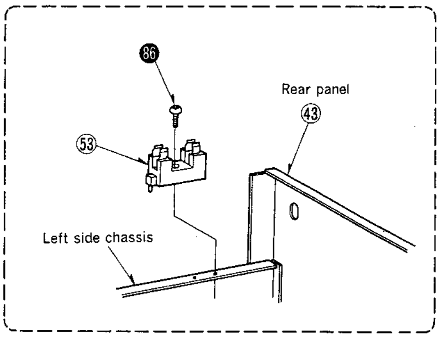

T701
ORN
RED
RED
GRY
GRY
ORN
ORN
BRN
WHT
YEL
YEL
BLK
BRN
BLU
BLU
BLK
AC 120
AC 10
0
AC 120
AC 110
0
S11
240V
220V
110V
120V
120V
110V
240V
220V
F3 4A
S10
SWITCHED
UNSWITCHED
C731 0.01
C732 0.01
AC 50/60Hz
110/120/220/240V
b
a
J

Notes:

1. **S10** : Power source switch in "**on**" position.
2. **S11** : Voltage selector switch in "**240V**" position.
   120V↔110V↔220V↔240V

■ CHANGE OF EXPLODED VIEWS


(41)
(42)
(54)
Cover
(39)
(40)
(85)
(84)
Voltage adjuster (S12)
(43)
Rear panel


(86)
Rear panel
(43)
(53)
Left side chassis

Printed in Japan
80050200 Ⓢ Y.K.

ORDER NO. SD8006-1767

Service Manual

FM/AM Stereo Receiver
SA-616, 616(K)
[FEE]

Areas

[FEE] is available in European Audio Club.

*** The colors of this model include silver and black. The black type model is provided with (K) in the Service Manual.**

For additional information, please refer to the service manual for Model No. SA-616 [M], [MC]

Notes: * This service manual included only the change of the **SA-616 [M], [MC]** service manual (ORDER NO. SD8004-1740).

* When servicing model **SA-616/(K) [FEE]**, this service manual and **SA-616 [M], [MC]** (ORDER NO. SD8004-1740) service manual should be used together.

CHANGES

Note: Ⓚ -marked parts are used for black type only.

Black type model No. SA-616(K)

■ REPLACEMENT PARTS LIST

Ref. No.	Change of Part No.		Part Name & Description	Per Set (Pcs.)		Remarks
	SA-616 (ORDER NO. SD8004-1740) ➡	**SA-616/(K) [FEE]**				
		TRANSFORMER				
T701	SLT5R43	SLT5R45	Transformer, Power Source	1		○
		FUSES				
F1	XBA1F80NU14	XBA2E100NS1	Fuse, Power Source, 10A (250V)	1		
F3	Addition	XBA2C40TR0	Fuse, Power Source, 4A (250V)	1		
		SWITCHES				
S10	SSL133	ESL21210S	Switch, Power Source	1		
S11	Addition	ESE37200	Switch, Voltage Adjuster	1		
		CAPACITORS				
C625, 626	ECQM1473KZ [M] ECQM1H104KZ [MC]	ECQM1473KZ	Polyester, 0.047μF, 125V, ± 10%	1		
C635, 636	ECQM1H104KZ	Deletion	Polyester	0		
C727	ECKDMY103PF	Deletion	Ceramic	0		
C731, 732,	Addition	ECKDKC103PF	Ceramic, 0.01μF, 400VAC, $^{+100}_{-0}$%	2		
		CABINET and CHASSIS PARTS				
4	SYW283	SYW283	Panel, Front Ass'y	1		
		SYW287 Ⓚ	Panel, Front Ass'y (Black)	1		
5	SDE255	SDE255	Filter, New Class A Badge Light	1		
		SDE255−1 Ⓚ	Filter, New Class A Badge Light (Black)	1		
42	RJA9Y	RJA52ZB	AC Cord	1		
43	SGP2330B	SGP2330−1B	Rear Panel	1		○
53	Addition	SJFA5101	Holder, Fuse	1		
54	Addition	SUV453	Cover, Voltage Adjuster	1		

Technics

Panasonic Tokyo
Matsushita Electric Industrial Co., Ltd.
1-2 1-chome Shiba-koen Minato-ku Tokyo 105, Japan

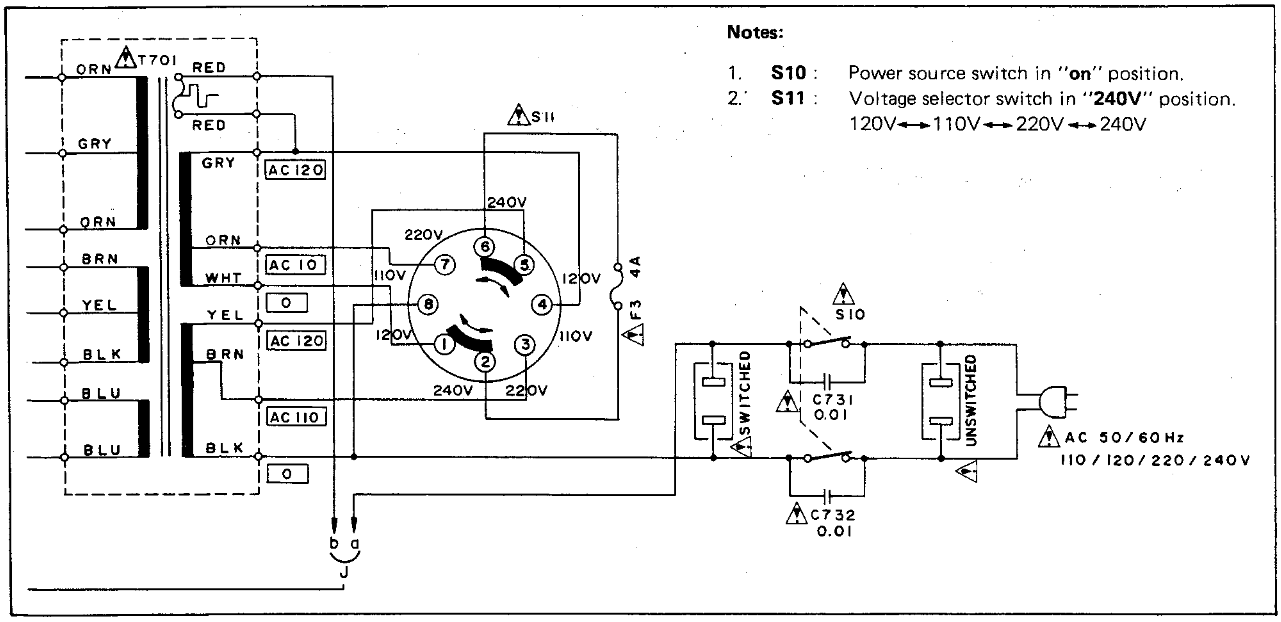
Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

SA-616

Ref. No.	Change of Part No.		Part Name & Description	Per Set (Pcs.)		Remarks
	SA-616 (ORDER NO. SD8004-1740)	➡ SA-616/(K) [FEE]				
SCREWS						
84	Addition	XSN3+6BVS	Screw, ⊕ 3 x 6 (Voltage Adjuster)	2		
85	Addition	XWA3BFZ	Washer, Spring ϕ 3	2		
86	Addition	XTN3+8B	Screw, ⊕ 3 x 8 (Fuse Holder)	1		
ACCESSORIES						
A2	Addition	RJP75	Plug Adaptor, Power Source	1		
A3	Addition	RJP74–1	Plug Adaptor, Power Source	1		
PACKING PARTS						
P4	SPG2639 [M] SPG2641 [MC]	SPG2639	Carton Box	1		○
P5	SQF10457 SQF10459	SQF10465 SQF10461 Ⓚ	Instructions Book, Printed Matter	1		○

■ CHANGE OF SCHEMATIC DIAGRAM

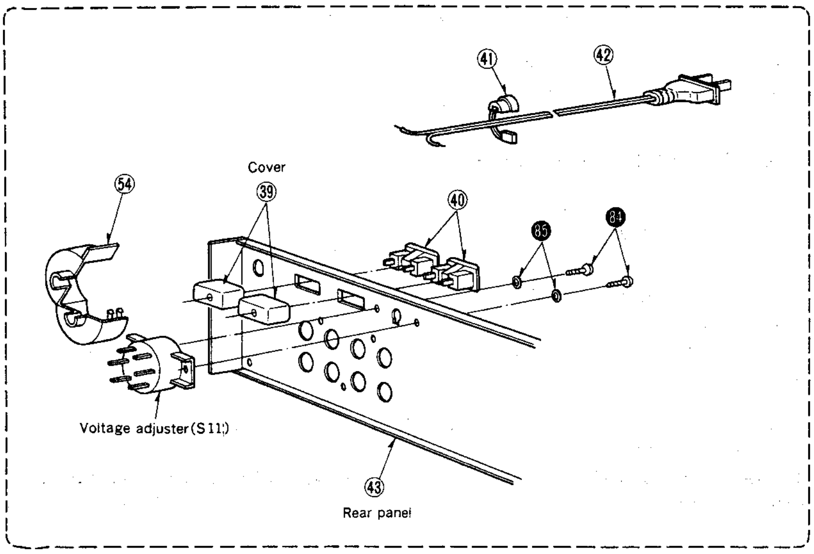
- **Power source circuit**

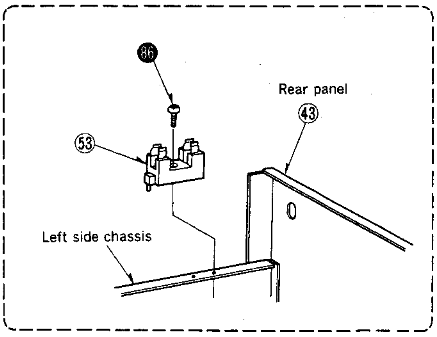

T701
ORN
RED
RED
GRY
GRY
ORN
ORN
BRN
WHT
YEL
YEL
BLK
BRN
BLU
BLU
BLK
AC 120
AC 10
0
AC 120
AC 110
0
S11
240V
220V
110V
120V
120V
110V
240V
220V
F3 4A
S10
SWITCHED
UNSWITCHED
C731 0.01
C732 0.01
AC 50/60Hz 110/120/220/240V
b a
J

Notes:

1. **S10** : Power source switch in "**on**" position.
2. **S11** : Voltage selector switch in "**240V**" position.
   120V↔110V↔220V↔240V

■ CHANGE OF EXPLODED VIEWS


41
42
Cover
39
40
54
85
84
Voltage adjuster (S11)
43
Rear panel


86
Rear panel
43
53
Left side chassis

Printed in Japan
80060370 Ⓢ Y.K.

ORDER NO. SD8004-1740

Service Manual

FM/AM Stereo Receiver

SA-616

[M], [MC]

Simulated wood cabinet

Areas

* [M] is available in U.S.A.
* [MC] is available in Canada.

TECHNICAL SPECIFICATIONS (Specifications are subject to change without notice for further improvement.)

(IHF '78)

■ AMPLIFIER SECTION

Rated minimum sine wave RMS power output	
20 Hz~20 kHz both channels driven	
0.005% total harmonic distortion	
	80W per channel (8 ohms)
0.01% total harmonic distortion	
	110W per channel (4 ohms)
1 kHz continuous power output	
both channels driven	
0.001% total harmonic distortion	
	90W per channel (8 ohms)
	120W per channel (4 ohms)
Dynamic headroom	1.5 dB (8 ohms)
	2.0 dB (4 ohms)
Total harmonic distortion	
rated power at 20 Hz~20 kHz	0.005% (8 ohms)
	0.01% (4 ohms)
half power at 20 Hz~20 kHz	0.005% (8 ohms)
half power at 1 kHz	0.001% (8 ohms)
SMPTE intermodulation distortion	0.01% (8 ohms)
Frequency response	
PHONO	RIAA standard curve ±0.3 dB
AUX, TAPE	5 Hz~70 kHz, −3 dB
	20 Hz~20 kHz, +0 dB, −0.3 dB
Input sensitivity	
PHONO	0.3 mV (2.5mV, IHF '66)
AUX, TAPE	18 mV (150mV, IHF '66)

S/N (IHF, A)	
PHONO	74 dB (82 dB, IHF '66)
AUX, TAPE	79 dB (100 dB, IHF '66)
Maximum input voltage	
PHONO	140 mV (150 mV, 1 kHz)
Input impedance	
PHONO	47 kilohms
AUX, TAPE	33 kilohms
Tone controls	
bass	50 Hz, +10 dB~ −10 dB
treble	20 kHz, +10 dB~ −10 dB
Acoustic controls (at tone "0" position)	
low boost	100 Hz, +6 dB
high boost	10 kHz, +6 dB
middle boost	1 kHz, + 5 dB
low cut	70 Hz, −6 dB/oct.
high cut	7 kHz, −6 dB/oct.
middle cut	1 kHz, −5 dB
Loudness control (volume at −30 dB)	50 Hz, +9 dB
Output voltage	
REC OUT	150 mV
Low frequency damping factor	50 (8 ohms)
	25 (4 ohms)
Load impedance	
MAIN or REMOTE	4~16 ohms
MAIN and REMOTE	8~16 ohms

Technics

Panasonic Company
Division of Matsushita Electric
Corporation of America
One Panasonic Way, Secaucus,
New Jersey 07094

Panasonic Hawaii, Inc.
320 Waiakamilo Road, Honolulu,
Hawaii 96817

Panasonic Canada
Division of Matsushita Electric,
of Canada Ltd.
5770 Ambler Drive,
Mississauga, Ontario L4W 2T3

FM TUNER SECTION

Frequency range*	87.9~107.9 MHz
Sensitivity	10.3 dBf (1.8 μV, IHF '58)
50 dB quieting sensitivity	
MONO	13.2 dBf (2.5 μV IHF '58)
STEREO	36.2 dBf (35.4 μV IHF '58)
Total harmonic distortion	
100 Hz	0.15% (MONO), 0.25% (STEREO)
1 kHz	0.1% (MONO), 0.15% (STEREO)
6 kHz	0.25% (MONO), 0.3% (STEREO)
S/N	
MONO	76 dB
STEREO	72 dB
Frequency response	20 Hz~15 kHz, +0.2 dB, −0.8 dB
Alternate channel selectivity	75 dB
Capture ratio	1.2 dB
Image rejection at 98.1 MHz	80 dB
IF rejection at 98.1 MHz	90 dB
Spurious response rejection at 98.1 MHz	100 dB
AM suppression	60 dB
Stereo separation	
1 kHz	45 dB
10 kHz	35 dB
Carrier leak	
19 kHz	−65 dB
38 kHz	−70 dB
Antenna terminals	300 ohms (balanced) 75 ohms (unbalanced)

AM TUNER SECTION

Frequency range*	530~1620 kHz
Sensitivity	30 μV, 250 μV/m
Selectivity	55 dB
Image rejection at 1000 kHz	50 dB
IF rejection at 1000 kHz	45 dB

GENERAL

Power consumption	500W, 630 VA
Power supply	AC 120V, 60 Hz
Batteries (for memory "back-up")	DC 4.5V 3 "AA" size batteries Panasonic UM-3 or equivalent
Dimensions (W×H×D)	566 × 172 × 396 mm (22-9/32" × 6-25/32" × 15-19/32")
Weight	18.2 kg (40.1 lb.)

Note:
Total harmonic distortion is measured by the digital spectrum analyzer (HP. 3045 system).

*This unit is equipped with an FM/AM allocation selector on the rear panel. The specifications shown above are correct with this selector set to the "FM 200 kHz/AM 10 kHz" position. If it is set to the "FM 50 kHz/AM 9 kHz" position, however, the FM frequency range becomes 87.5~108.0 MHz, and the AM frequency range becomes 522~1611 kHz.

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VARIABLE RESISTORS . . . . .30~31
SCHEMATIC DIAGRAM A .32~36
SCHEMATIC DIAGRAM B .37~41
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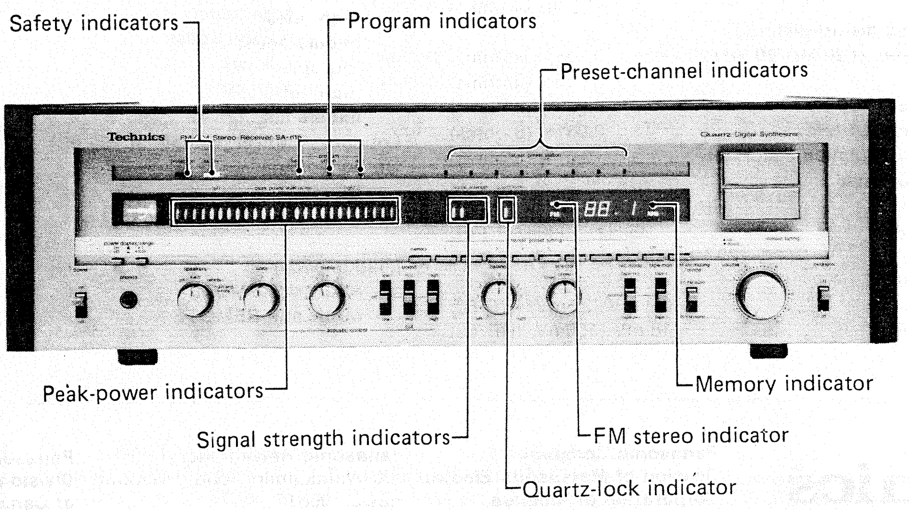
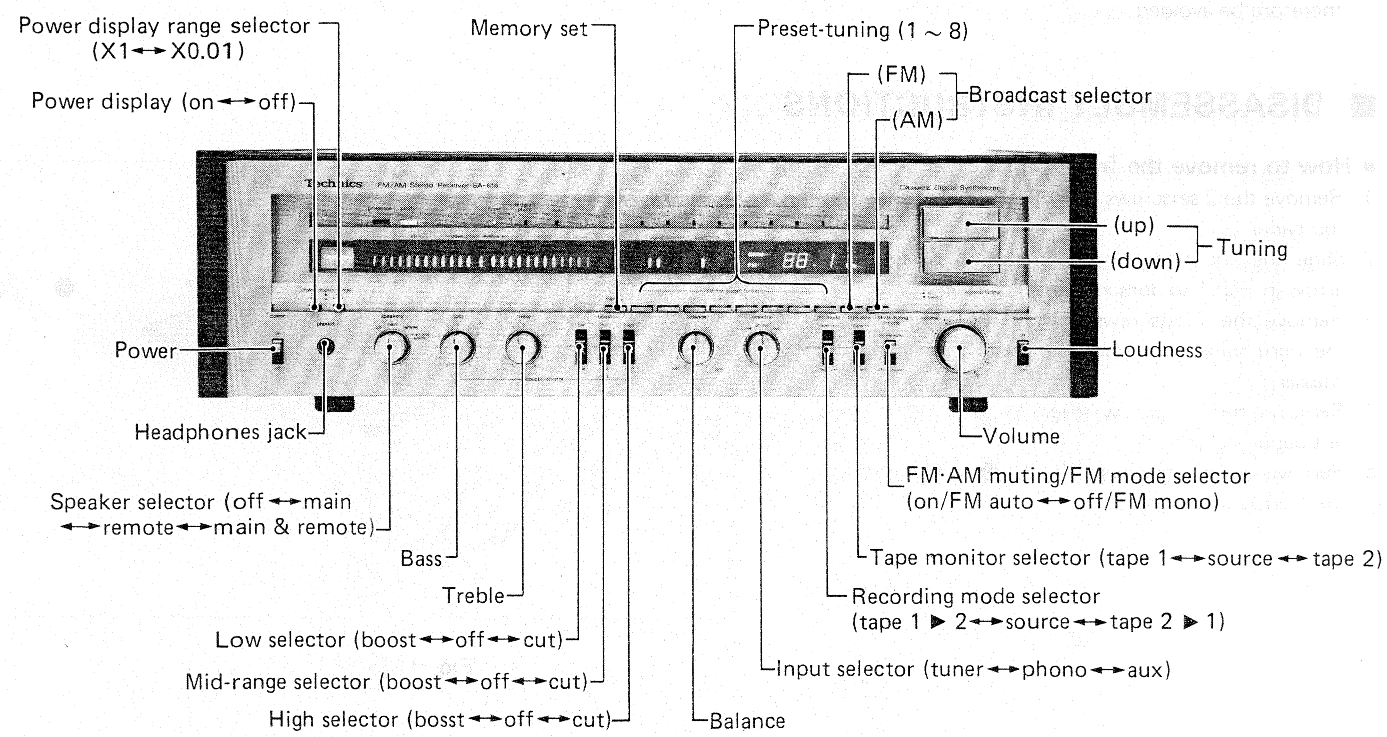
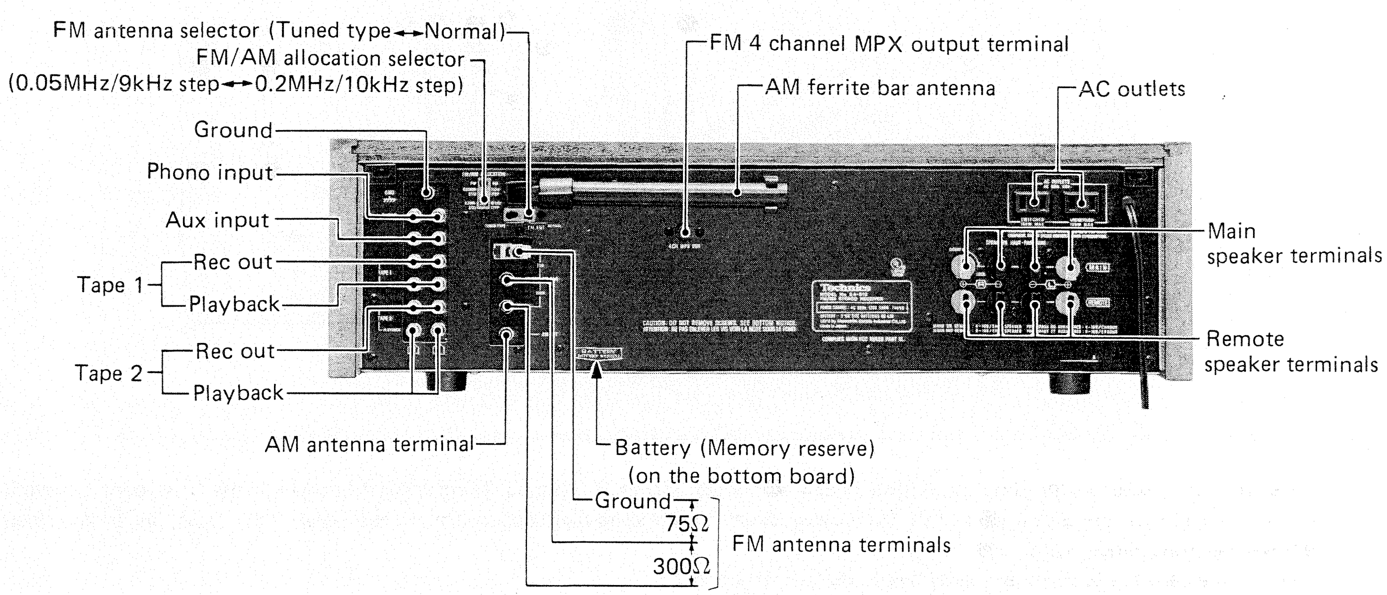
REPLACEMENT PARTS LIST
(Cabinet & Chassis Parts) 46

LOCATION OF CONTROLS




Power display range selector
(X1↔X0.01)
Power display (on↔off)
Memory set
Preset-tuning (1 ~ 8)
(FM)
(AM)
Broadcast selector
(up)
(down)
Tuning
Power
Loudness
Headphones jack
Volume
FM·AM muting/FM mode selector
(on/FM auto↔off/FM mono)
Speaker selector (off↔main
↔remote↔main & remote)
Bass
Treble
Tape monitor selector (tape 1↔source↔tape 2)
Recording mode selector
(tape 1 ▶ 2↔source↔tape 2 ▶ 1)
Low selector (boost↔off↔cut)
Mid-range selector (boost↔off↔cut)
Input selector (tuner↔phono↔aux)
High selector (bosst↔off↔cut)
Balance


FM antenna selector (Tuned type↔Normal)
FM/AM allocation selector
(0.05MHz/9kHz step↔0.2MHz/10kHz step)
FM 4 channel MPX output terminal
AM ferrite bar antenna
AC outlets
Ground
Phono input
Aux input
Tape 1
Rec out
Playback
Main
speaker terminals
Tape 2
Rec out
Playback
Remote
speaker terminals
AM antenna terminal
Battery (Memory reserve)
(on the bottom board)
Ground
75Ω
300Ω
FM antenna terminals

BEFORE STARTING THE REPAIRING

Before adjusting or repairing, be sure to short-circuit opposite poles of the 8200μF capacitors (C701 ~ 704) with a resistor approximately of "50Ω, 5W" for discharging the charged voltage.
Short-circuiting with a screw driver and the like is not only dangerous, but may destroy transistors and diodes, and should therefore be avoided.

DISASSEMBLY INSTRUCTIONS

• How to remove the front panel

1. Remove the 2 setscrews (Fig. 1 : ❶, ❷)of the top panel.
2. Slide the top panel in the direction of the arrow in Fig. 1 to detach it from the set.
3. Remove the 7 setscrews (Fig. 2 : ❸ ~ ❾) of the right panel to detach the panel from the chassis.
4. Remove the 1 setscrew (Fig. 2 : ❿) of the left panel.
5. Remove the 5 setscrews (Fig. 2 : ⓫ ~ ⓯) of the front panel.

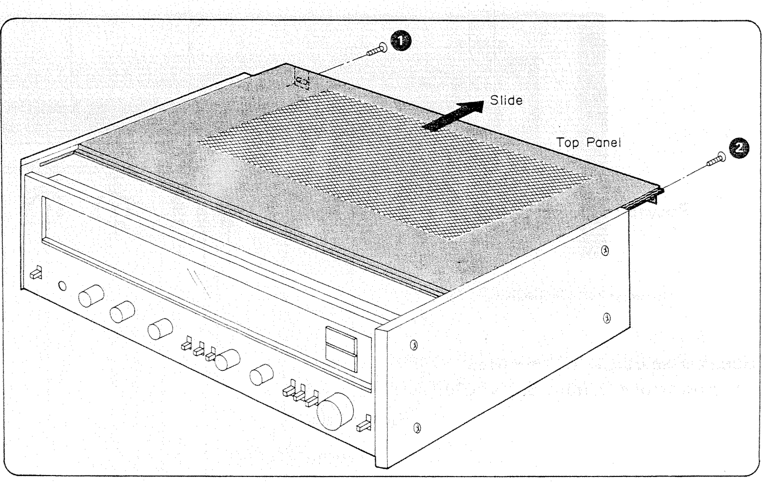


Fig. 1

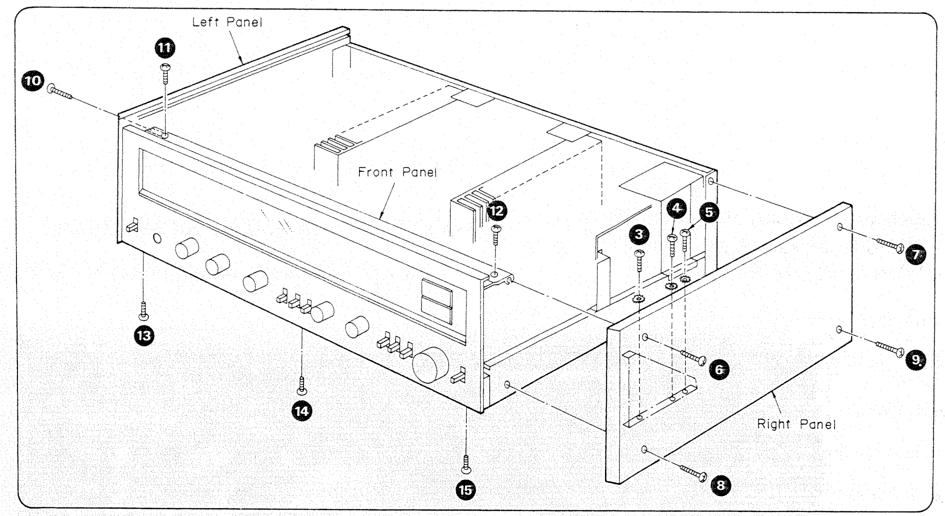


Fig. 2

6. Move the front panel in the direction of the arrow Ⓐ in Fig. 3. Next, holding the left bottom of the front panel, move it in the direction of the arrow Ⓑ until the power switch knob is disengaged from the hole of the front panel, and then remove the front panel. (arrow Ⓒ)
   Note: Take care not to give damage to the switch knobs.
7. As shown in Fig. 4, remove the setscrews ⓰ , ⓱ , and 5 lugs to detach the LED display printed circuit boards from the back of the front panel.

● How to remove the printed circuit boards

1. Remove the front panel, and the LED display printed circuit boards secured on it. (Refer to "How to remove the front panel.")
2. Remove the 2 setscrews (Fig. 5 : ⑱ , ⑲) to detach the printed circuit board (top) of the tuner circuit as shown in Fig. 5.
3. To detach the voltage regulator printed circuit board, remove the setscrews ⑳ and ㉑ , then lift the board in the direction of the arrow in the Fig. 5 to detach it from the chassis.
4. To detach the FL display printed circuit board (center), first remove the tuner printed circuit board and the 4 setscrews (Fig. 6 : ㉒ ~ ㉕) of the shield plate (upper), and then lift the circuit board in the direction of the arrow in Fig. 6.

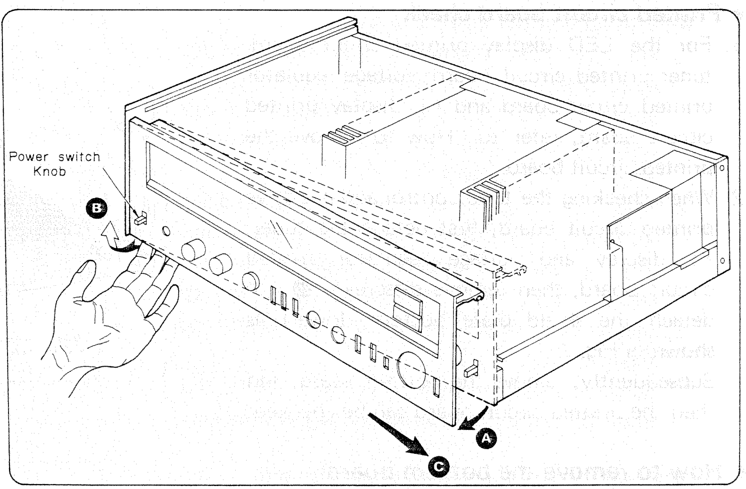

Power switch Knob
B
A
C

Fig. 3

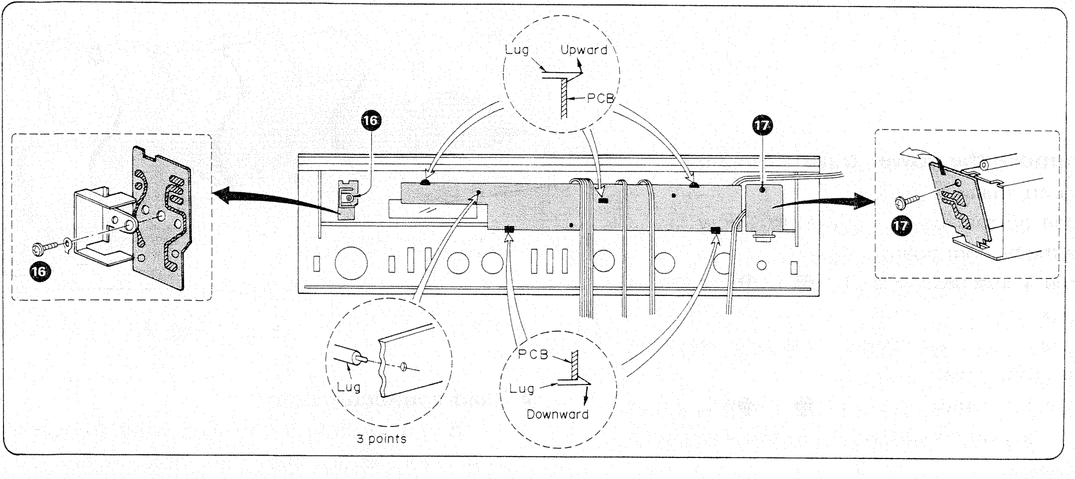

Lug
Upward
PCB
⑯
⑰
⑯
⑰
Lug
3 points
PCB
Lug
Downward

Fig. 4

Note: For ⑲ and ⑳ in Fig. 5, screw (XTB3+8BFZ1) provided with pin like **A** encircled by dotted line is used.
However, to replace them, use 3 x 8mm tapping screw (XTB3+8BFZ) and toothed lock washer (XWC3B) like **B**.

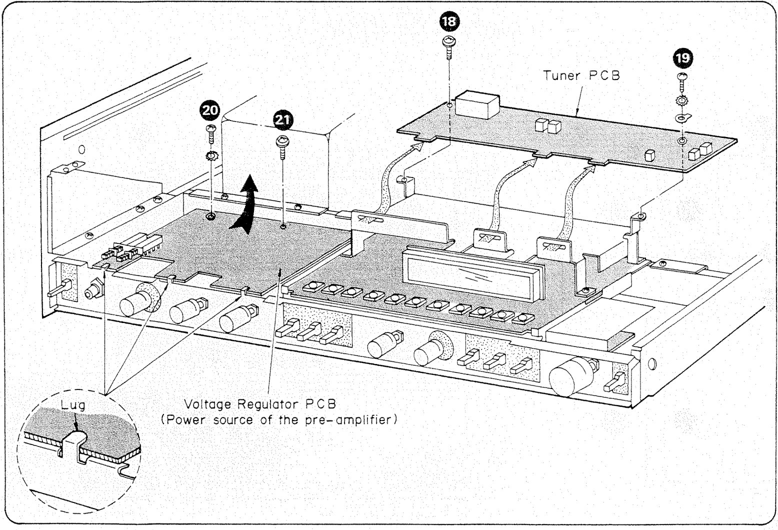
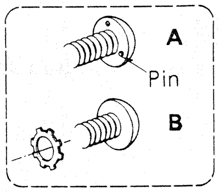

⑱
⑲
Tuner PCB
⑳
㉑
Lug
Voltage Regulator PCB
(Power source of the pre-amplifier)

Fig. 5



● Printed circuit board check

1. For the LED display printed circut board, tuner printed circuit board, voltage regulator printed circut board and FL display printed circuit board, refer to "How to remove the printed circuit board."
2. When checking the tone control and pre-drive printed circuit board, first detach the tuner, FL display and voltage regulator printed circuit board, then remove setscrew ㉖ to detach the shield plate bottom (lower) as shown in Fig. 7.
   Subsequently, remove the bottom board, and then the printed circuit board can be checked.

● How to remove the bottom board

1. Remove the 12 setscrews (Fig. 8 : ㉗ ~ ㊳) of the bottom board.
2. Remove the bottom board.

● How to remove the power transistor

(Example: Left channel)

1. Remove the bottom board. (Refer to "How to remove the bottom board.")
2. Remove the 4 setscrews (Fig. 9 : ㊴ ~ ㊷) of the heat sink.
3. Remove the top panel. (Refer to "How to remove the front panel.")
4. Remove the 4 setscrews (Fig. 10 : ㊸ ~ ㊻) of the metal fitting which secures the electrolytic condenser.
   Then the metal fitting can be removed.
5. Unsolder the power transistor. (Fig. 9)
6. Remove the transistor along with the heat-sink from the printed circuit board as shown in Fig. 10.
7. When installing the power transistor onto the heat-sink, apply a heat diffusing agent to both sides of the mica plate.

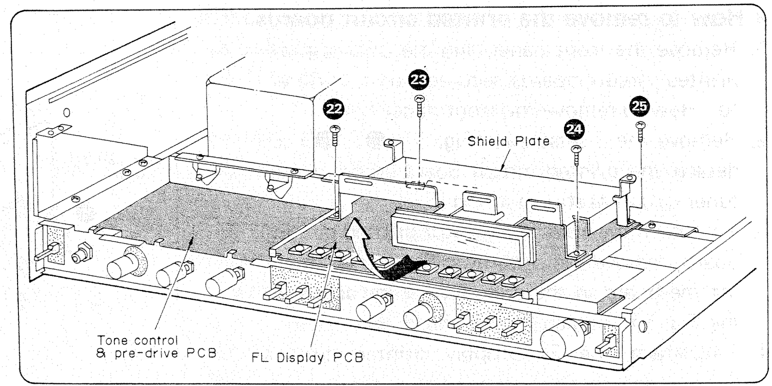


Fig. 6

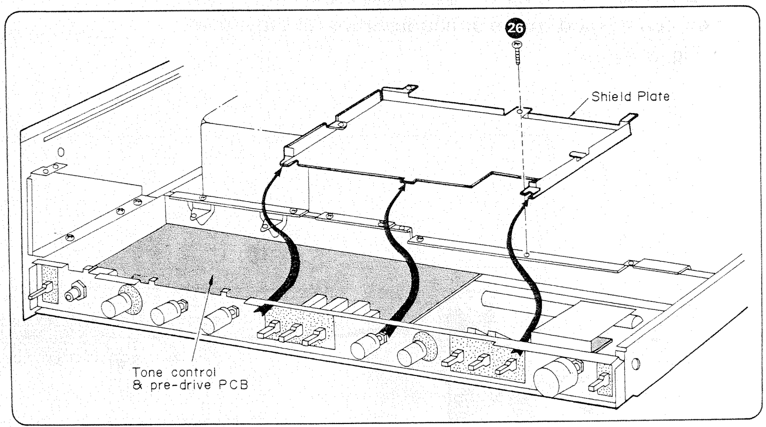


Fig. 7

● Lead connector

1. To disconnect the lead wires from the lead connector, open the "lead holder" of the connector as shown in Fig. 11, and pull out the lead wires.
2. The lead wires are provided with identification colors or patterns as in Fig. 11. So, insert them into the connector in correct positions.
3. It is advisable to put pencil marks on both the leads and the connector beforehand for the convenience of insertion.

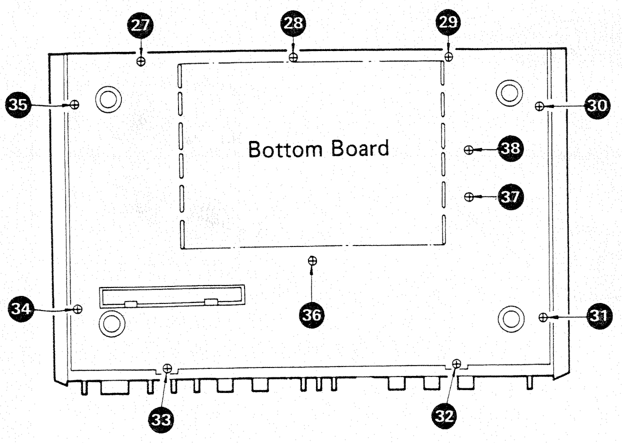


Fig. 8

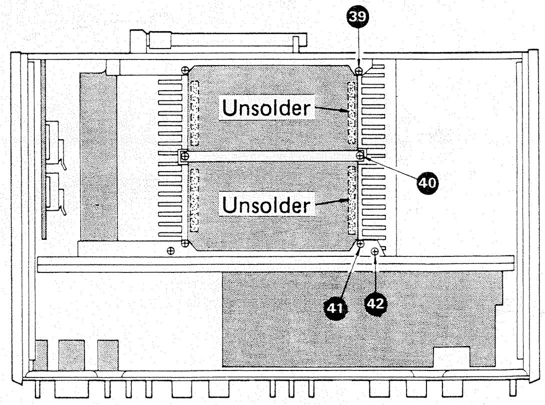


Fig. 9

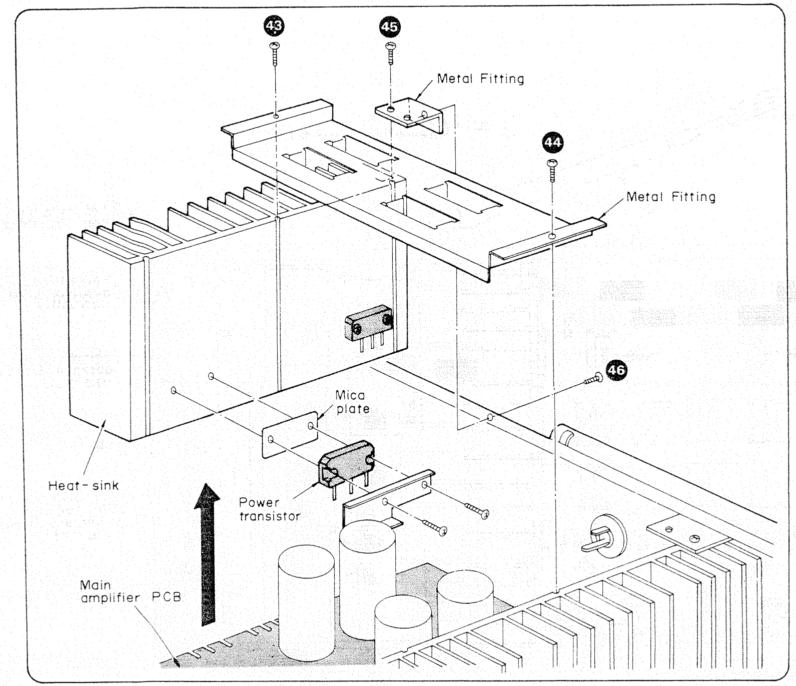

㊸
㊺
Metal Fitting
㊹
Metal Fitting
㊻
Mica plate
Heat-sink
Power transistor
Main amplifier PCB

Fig. 10

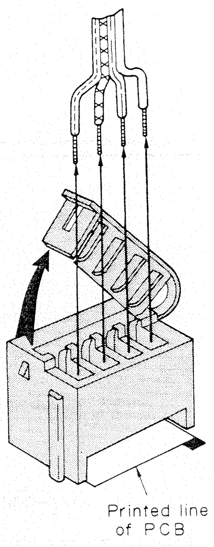

Printed line of PCB

Fig. 11

- Since standardized parts are mentioned in the parts list, they are sometimes different in Part No. and Color from the product parts.

Screw No.	Type	Color	Product Part No.	Figure No.
❶ ~ ❷	⊕ 3 x 8mm, Tapping (With plain washer)	Black	XTW3+8HFZ	1
❸ ~ ❺	⊕ 4 x 10mm, Tapping	Gold	XTB4+10F	2
❻ ~ ❿	⊕ 4 x 25mm (With spring washer & plain washer)	Black	XYAS4+25001	2
⓫ ~ ⓯	⊕ 3 x 8mm, Tapping	Black	XTB3+8BFZ	2
⓰ ~ ⓲	⊕ 3 x 10mm, Tapping (With plain washer)	Gold	XTW3+10H	4, 5
⓳ ~ ⓴	⊕ 3 x 8mm, Tapping (With toothed lock washer)	Black	XTBS3+8BFZ1	5
㉑	⊕ 3 x 10mm, Tapping (With plain washer)	Gold	XTW3+10H	5
㉒ ~ ㉖	⊕ 3 x 8mm, Tapping	Gold	XTB3+8B	6, 7
㉗ ~ ㊳	⊕ 3 x 8mm, Tapping	Red	XTB3+8BFYR	8
㊴ ~ ㊷	⊕ 3 x 10mm, Tapping (With plain washer)	Red	XTW3+10HFYR	9
㊸ ~ ㊻	⊕ 3 x 10mm, Tapping	Black	XTB3+10BFZ	10

• To remove the remote control switch band

1. Press the band with a screw driver in the direction shown in Fig. 12.
2. Remove the band, first at point Ⓐ as shown in Fig. 13. (Care should be taken not to hold Ⓒ in Fig. 12.)
3. Then remove the band at point Ⓑ.
4. When re-attaching the band start at point Ⓑ.

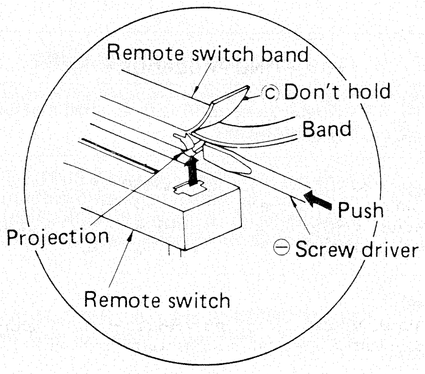

Remote switch band
Ⓒ Don't hold
Band
Push
Projection
⊖ Screw driver
Remote switch

Fig. 12

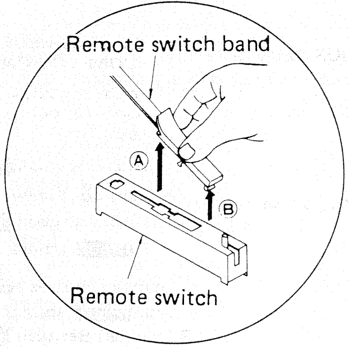
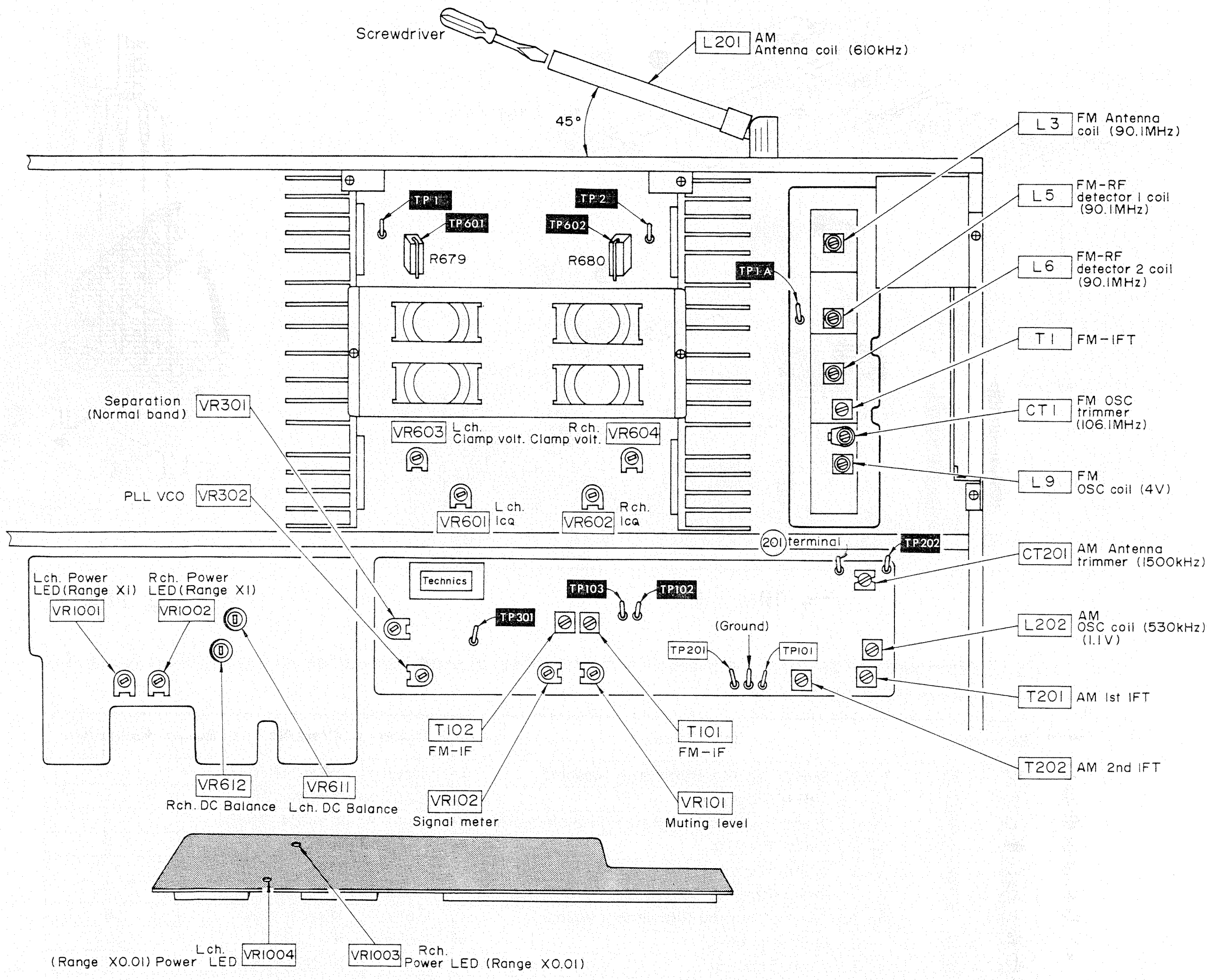

Remote switch band
Ⓐ
Ⓑ
Remote switch

Fig. 13

■ ADJUSTMENT POINTS


Screwdriver
L201 AM Antenna coil (610kHz)
45°
L 3 FM Antenna coil (90.1MHz)
TP 1
TP 2
TP601
TP602
R679
R680
TP1 A
L 5 FM-RF detector 1 coil (90.1MHz)
L 6 FM-RF detector 2 coil (90.1MHz)
T 1 FM-IFT
CT 1 FM OSC trimmer (106.1MHz)
L 9 FM OSC coil (4V)
Separation (Normal band) VR301
VR603 L ch. Clamp volt.
R ch. Clamp volt. VR604
PLL VCO VR302
VR601 L ch. Icq
VR602 R ch. Icq
201 terminal
TP202
CT201 AM Antenna trimmer (1500kHz)
L ch. Power LED (Range X1)
R ch. Power LED (Range X1)
VR1001
VR1002
Technics
TP103
TP102
TP301
(Ground)
TP201
TP101
L202 AM OSC coil (530kHz) (1.1V)
T201 AM 1st IFT
T202 AM 2nd IFT
T102 FM-IF
T101 FM-IF
VR612 Rch. DC Balance
VR611 Lch. DC Balance
VR102 Signal meter
VR101 Muting level
(Range X0.01) Power L ch. LED VR1004
VR1003 Rch. Power LED (Range X0.01)

■ ADJUSTING INSTRUCTIONS

● Setting of controls and instruments to be used

* Before the adjustment, VR601, VR602, VR603 and VR604 should be turned to counter-clockwise direction.

1. Speaker switch . . . . Main
2. Sound volume . . . . 0 (minimum)
3. DC voltmeter (capable to reasure 5mV)

AMPLIFIER ADJUSTMENT

No.	ADJUSTMENTS	DC VOLTMETER CONNECTION	PARTS ADJUSTED	ADJUSTING PROCEDURE
1	DC balance	Connect it to "Speaker" terminals of L and R channels.	VR611 (L channel) VR612 (R channel)	* Adjust it to zero (0) with as small measuring range as possible.
2	Clamp voltage	(L channel) Between TP1 and TP601 (minus probe) (R channel) Between TP2 and TP602 (minus probe)	VR603 (L channel) VR604 (R channel)	* Turn Icq semi-fixed resistors VR601, VR602 to minimum. (counter-clockwise direction) * Adjust VR603 (L ch) and VR604 (R ch) to approx. 0.5mV after ten minutes warm-up time.
3	Icq	(L channel) Between TP1 and TP601 (minus probe) (R channel) Between TP2 and TP602 (minus probe)	VR601 (L channel) VR602 (R channel)	* Adjust VR601 (L ch) and VR602 (R ch) to approx. 8 ~ 12mV after ten minutes warm-up time.

- **Setting**

* Connect a low frequency oscillator to the AUX input terminal, and 8-ohm load resistor and audio AC voltmeter to the speaker terminal.
* Add 1kHz signal from the low frequency oscillator to the set.
* Set the sound volume to the maximum point.
* Set the power display switch to "on" position.

No.	ADJUSTMENTS	POWER DISPLAY RANGE SELECT SWITCH POSITION	PARTS ADJUSTED	ADJUSTING PROCEDURE
1	LED peak power level display	X1	VR1001 (Left channel)	1. Adjust the input level so that the AC voltmeter indicates 17V. 2. Adjust VR1001 while observing the peak power level display so that the LED at 40W is about to turn on.
2			VR1002 (Right channel)	Adjust VR1002 in the same way as for left channel. If the indication of left channel changes, re-adjust VR1001.
3		X0.01	VR1004 (Left channel)	1. Adjust the input level so that the AC voltmeter indicates 0.1V. 2. Adjust VR1004 while observing the peak power level display so that the LED at 0.1W is about to turn on.
4			VR1003 (Right channel)	Adjust VR1003 in the same way as for left channel. If the indication of left channel changes, re-adjust VR1004.

* Set FM/AM allocation selector to "FM 0.2MHz/AM 10kHz" position.
* Set antenna selector to "normal" position.

AM TUNER ADJUSTMENT

*** Setting and Equipment used**

1. AC and DC electronic voltmeters (VTVM)
2. AM signal generator (AM-SG)
3. Maintain line voltage at 120 volts.
4. Output of signal generator should be no higher than necessary to obtain an output reading.
5. Adjust the antenna coil (L201) position by using a screwdriver so that it is at approximately 45 degrees to the rear panel.
6. Set input selector to "tuner" position.
7. Use a non-metal screwdriver for the adjustment.
8. Set FM·AM muting/mode switch to "off/FM mono" position.
9. Set broadcast selector to "AM" position.
10. Set tape monitor and recording mode selector to "source" position.
11. Set speaker selector to "main & remote" position.
12. Set mode switch to "stereo" position.

Step No.	AM SIGNAL GENERATOR		DISPLAY FREQUENCY	PREPARATIONS	PARTS ADJUSTED	ADJUSTING PROCEDURE
	CONNECTION	FREQUENCY				
	AM-IF ADJUSTMENT					
1	Connect AM-SG to AM antenna terminal through 200pF capacitor. Common to chassis. (Powerful input)	450kHz (30% Mod. with 400Hz	Frequency of non-interference	Connect AC VTVM or scope to "Speaker" terminals of the set.	T201 (1st IFT) T202 (2nd IFT)	* Adjust the input frequency and adjustment points so that the output becomes maximum.
	AM-RF ADJUSTMENT					
2	Connect AM-SG to AM antenna terminal through 200pF capacitor. Common to chassis. (Weak input)	530kHz (30% Mod. with 400Hz)	530kHz	Connect DC VTVM to TP202 terminal.	L202 (OSC Coil)	Adjust L202 to 1.1V ± 0.05V.
3		610kHz (30% Mod. with 400Hz)	610kHz	Connect AC VTVM to scope to "Speaker" terminals of the set.	L201 (ANT Coil)	1. Adjust for maximum output. 2. Adjust ferrite core of L201 by screwdriver.
4		1500kHz (30% Mod. with 400Hz)	1500kHz	Connect AC VTVM to scope to "Speaker" terminals of the set.	CT201(ANT Trimmer)	1. Adjust for maximum output. 2. Repeat steps (3) and (4) until the frequency correctly matches the dial display.

FM TUNER ADJUSTMENT

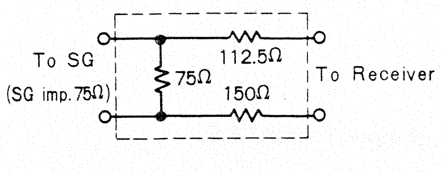
*** Equipment used**
1. FM signal generator (FM-SG)
2. Stereo modulator
3. Distortion analyser
4. Oscilloscope
5. AC and DC electronic voltmeters (VTVM).
6. Frequency counter (19kHz and 108MHz measurable).
7. FM 300Ω dummy antenna (Fig. 12).

*** Preparation of FM signal generator (FM-SG)**
1. Connect stereo modulator to FM-SG.
2. Apply SG output to antenna terminal of the set through 300Ω FM dummy antenna.
3. The standard input of the set is 60dB (1mV), 400Hz 100% modulation (Because of using dummy antenna, SG output must be 12dB plus (IHF). That is, when input is 60dB, SG output is to be 72dB.

*** Setting**
1. Set IF band selector to "normal" position.
2. Set broadcast selector to "FM" position.
3. Other setting are the same as in AM adjustment.

Step No.	FM SIGNAL GENERATOR		DISPLAY FREQUENCY	INDICATOR	ADJUSTMENT POINTS	REMARKS
	CONNECTION	FREQUENCY				
	FM-IF ADJUSTMENT					
5	–	No-Signal	Frequency of non-interference	Connect DC VTVM between TP102 and TP103 through choke coil. (Refer to Fig. 13)	T101 (Discri. IFT)	Adjust T101 core so that voltage measured in signal mode is 0V in 300mV range.
	FM RF ADJUSTMENT					
6	–	No-Signal	87.9MHz	Connect DC VTVM to TP1A terminal.	L9 (OSC Coil)	Adjust L9 (OSC Coil) to 4.0V.
7	Connect FM-SG to FM antenna terminal through 300Ω FM dummy antenna.	90.1MHz (100% Mod. with 400Hz) weak input	90.1MHz	Connect scope to "Speaker" terminals of the set.	L5 (RF DET Coil 1st) L6 (RF DET Coil, 2nd) L3 (ANT Coil) T1 (FM IFT)	1. Add weak input so that noise is included in the output wave form. 2. Make the adjustment so that the output wave form is vertically symmetrical. Refer to Fig. 14. 3. Repeat the steps (7) and (8) until the frequency correctly matches the broadcasts frequency display.
8		106.1MHz (100% Mod. with 400Hz)	106.1MHz	Connect scope to "Speaker" terminals of the set.	CT1 (OSC Trimmer)	
	FM MONO DISTORTION ADJUSTMENT					
9	Connect FM-SG to FM antenna terminal through 300Ω FM dummy antenna. (Apply 60dB to antenna terminal)	100.1MHz (100% Mod. with 400Hz)	100.1MHz	Connect distortion analyser to "Speaker" terminals of the set.	T101, T102 (Discri. IFT)	1. Set the FM muting/FM mode switch to "on/auto" and then check step (5) in no signal mode. 2. If it is deflected, readjust of T101. 3. Adjust T102 core so that distortion of right and left channels are minimized.
	FM MUTING LEVEL ADJUSTMENT					
10	Connect FM-SG to FM antenna terminal through 300Ω FM dummy antenna. (Apply 16dB to antenna terminal)	100.1MHz (100% Mod. with 400Hz)	100.1MHz	Connect AC VTVM or scope to "Speaker" terminals of the set.	VR101 (Muting level)	1. Set the FM muting/FM mode switch to "off/mono". 2. With the FM muting/FM mode switch set to "on/auto", adjust VR101 so that the output is given with muting condition released.
	SIGNAL METER LED (Light Emitting diode) INDICATOR ADJUSTMENT					
11	Connect FM-SG to FM antenna terminal through 300Ω FM dummy antanna. (Apply 45dB to antenna terminal)	100.1MHz (100% Mod. with 400Hz)	100.1MHz	Signal meter LED	VR102 (Meter level)	Adjust VR102 while observing the signal meter LED so that the indicator at 5th is about to turn on.
	FM MPX PILOT (VCO) ADJUSTMENT					
12	Connect FM-SG to FM antenna terminal through 300Ω FM dummy antenna. (Monaural signal)	100.1MHz (Non-modulated)	100.1MHz	Connect frequency counter to TP301 terminal.	VR302 (VCO)	1. Set the FM muting/FM mode switch to "on/auto". 2. Adjust VR302 to 19kHz ± 30Hz.

Step No.	FM SIGNAL GENERATOR		DISPLAY FREQUENCY	INDICATOR	ADJUSTMENT POINTS	REMARKS
	CONNECTION	FREQUENCY				
	STEREO DISTORTION ADJUSTMENT					
13	Connect FM-SG to FM antenna terminal through 300Ω FM dummy antenna. (Pilot 10% Mod. stereo signal)	100.1MHz (100% Mod. with 400Hz (L mode)	100.1MHz	Connect distortion analyser to "Speaker" terminals of the set.	T1 (IFT)	1. Set the FM muting/FM mode switch to "on/auto". 2. Re-adjust the already adjusted T1 within ± 90° from the preset core position so that the distortion of L ch is minimized. 3. Re-check the steps 5, 9 and 10.
	SEPARATION ADJUSTMENT					
14	Connect FM-SG to FM antenna terminal through 300Ω FM dummy antenna. (Pilot 10% Mod. stereo signal)	100.1MHz (100% Mod. with 1kHz) (L or R mode)	100.1MHz	Connect AC VTVM to "Speaker" terminals of the set.	VR301 (Normal IF separation)	1. Set the IF band selector to "normal". 2. Set the FM muting/FM mode switch to "on/auto". 3. Adjust VR301 so that R output is minimized when stereo modulator is in L (L ch. modulation) mode and that L output is minimized in R mode.



300Ω FM Dummy Antenna

Fig. 12

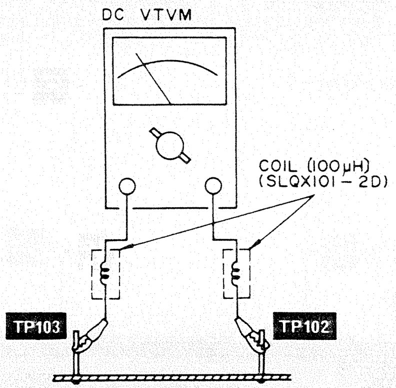
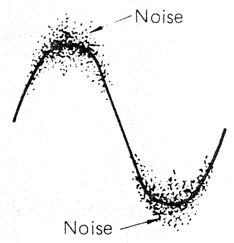


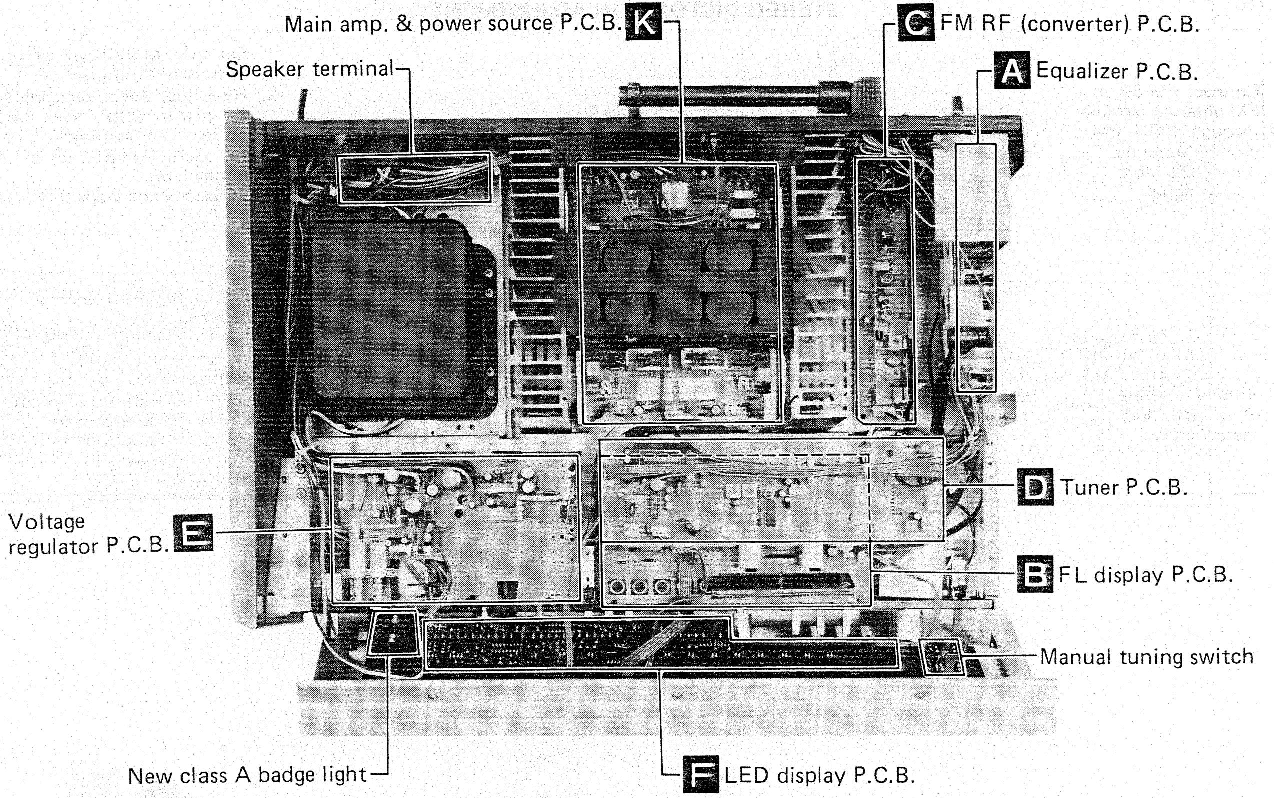
Fig. 13

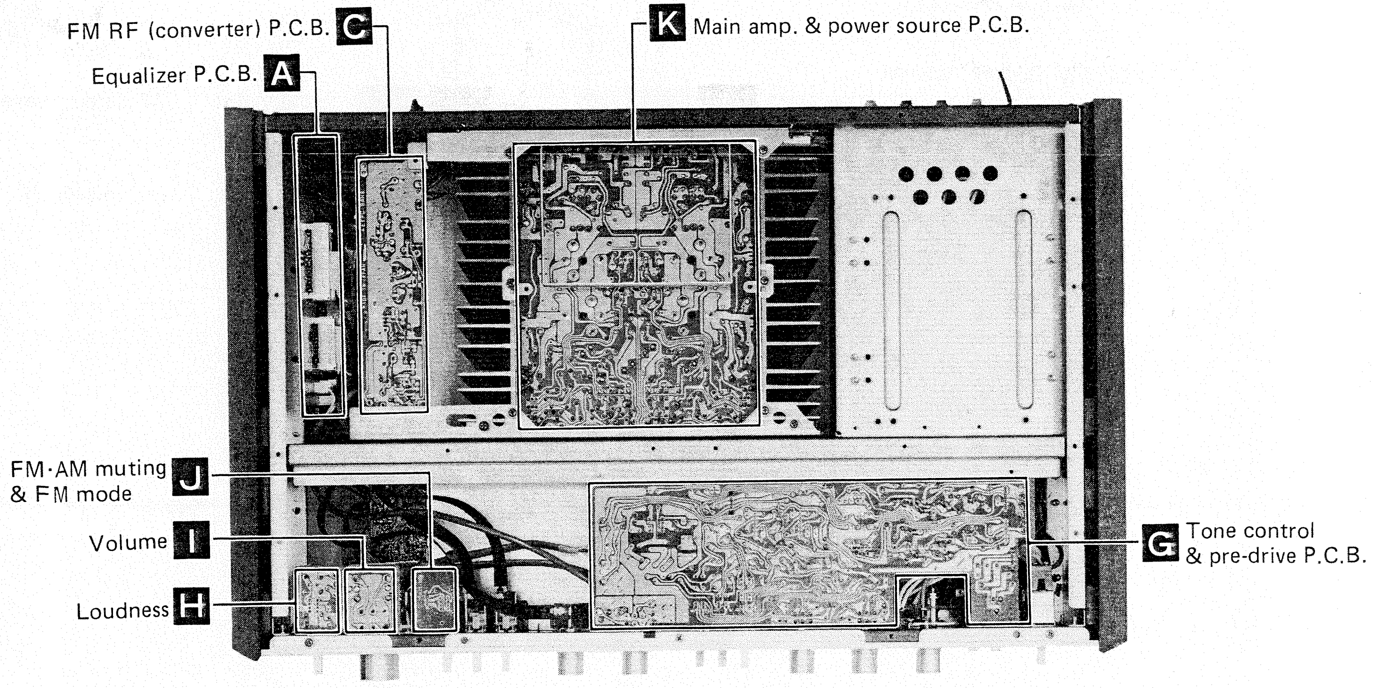


AF output wave form

Fig. 14

■ LOCATION OF P.C.B.

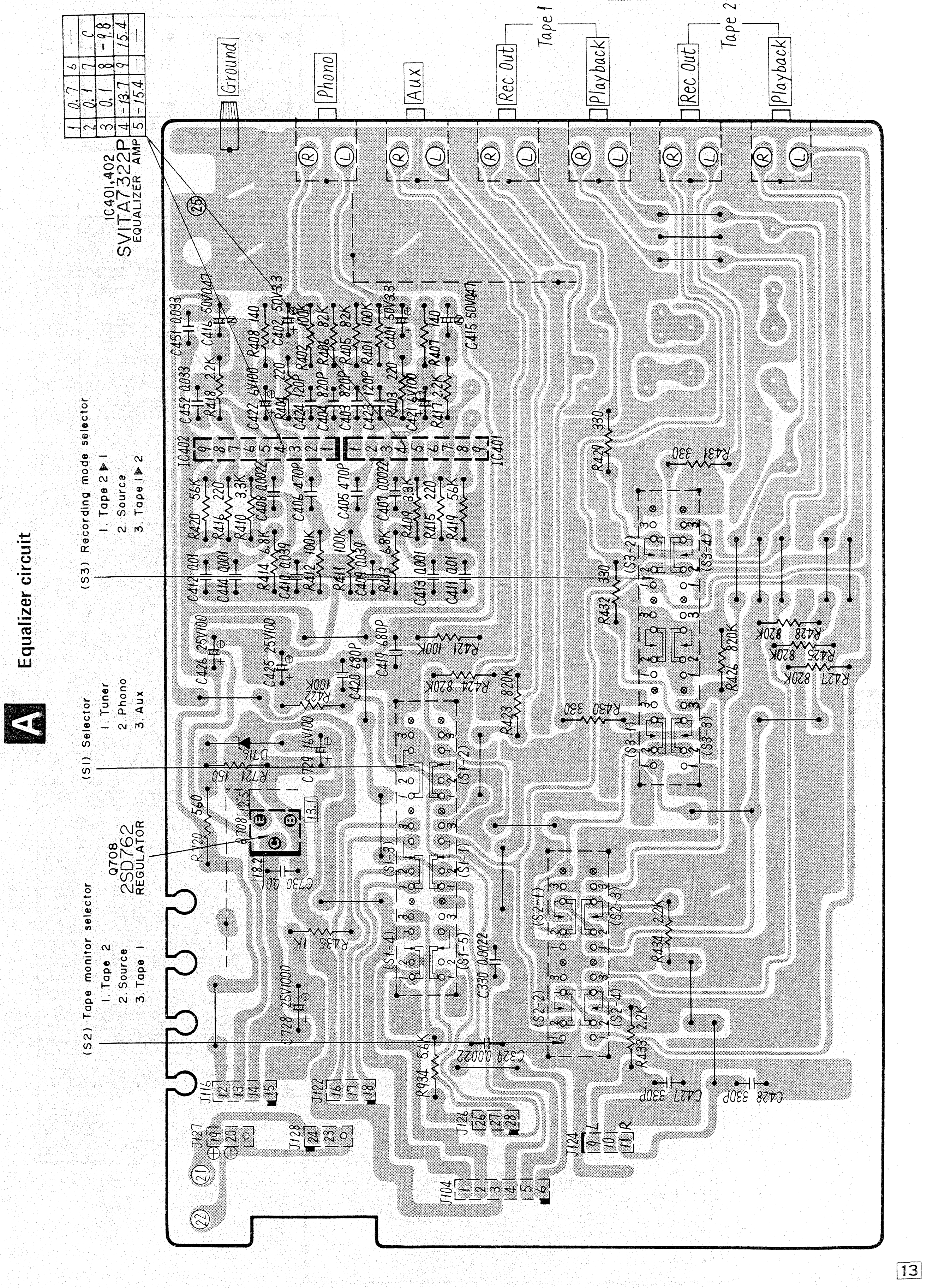

Main amp. & power source P.C.B. K
C FM RF (converter) P.C.B.
A Equalizer P.C.B.
Speaker terminal
D Tuner P.C.B.
Voltage regulator P.C.B. E
B FL display P.C.B.
Manual tuning switch
New class A badge light
F LED display P.C.B.


FM RF (converter) P.C.B. C
Equalizer P.C.B. A
K Main amp. & power source P.C.B.
FM·AM muting & FM mode J
Volume I
Loudness H
G Tone control & pre-drive P.C.B.

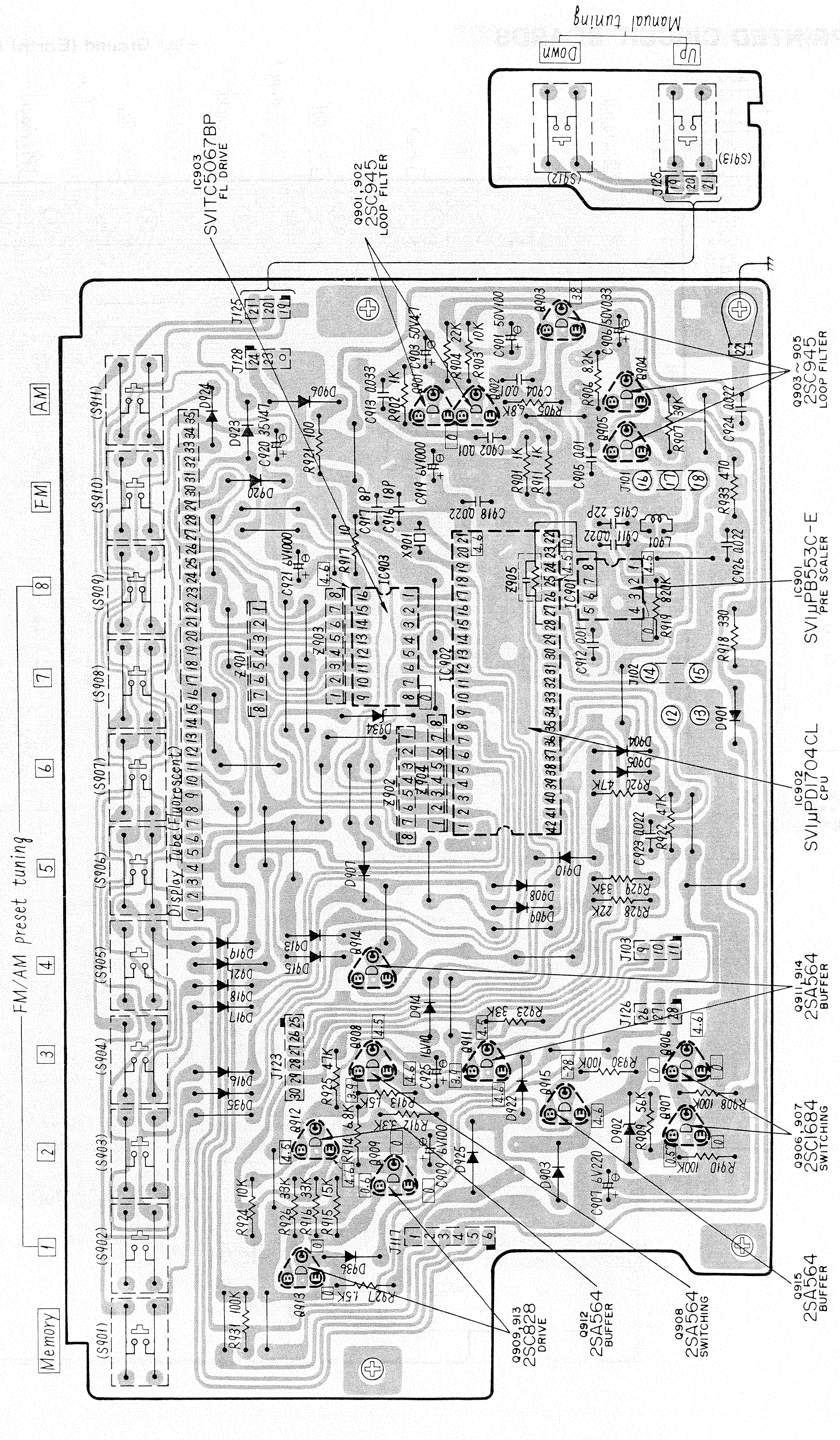
Bottom view

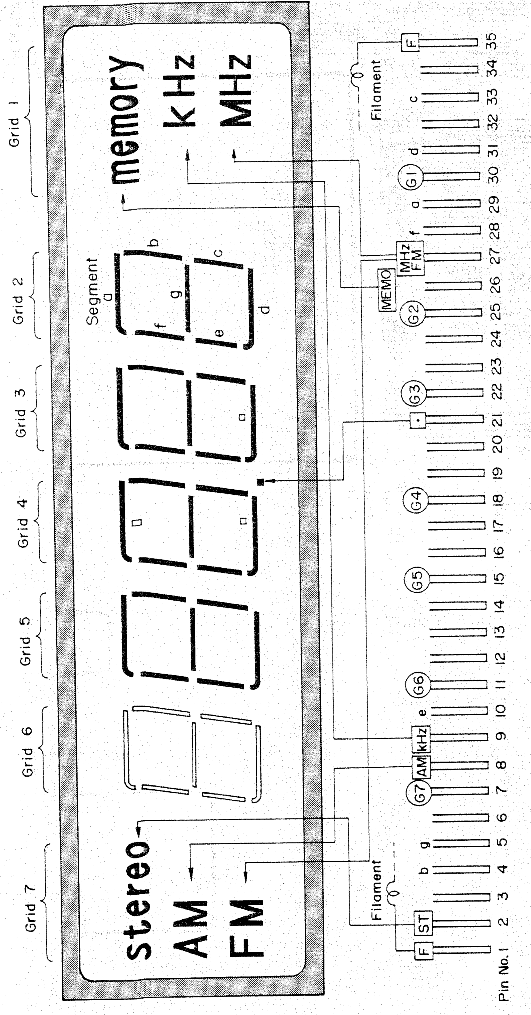
■ PRINTED CIRCUIT BOARDS

▨ Ground (Earth) lines


A
Equalizer circuit
(S3) Recording mode selector
1. Tape 2 ▶ 1
2. Source
3. Tape 1 ▶ 2
(S1) Selector
1. Tuner
2. Phono
3. Aux
(S2) Tape monitor selector
1. Tape 2
2. Source
3. Tape 1
IC401, 402
SVITA7322P
EQUALIZER AMP
1 0.7 6 —
2 0.1 7 C
3 0.1 8 -9.8
4 -13.7 9 15.4
5 -15.4 — —
Q708
2SD762
REGULATOR
Ground
Phono
Aux
Rec Out
Playback
Tape 1
Rec Out
Playback
Tape 2
R
L
IC401
IC402
C451 0.033
C416 50V0.47
R408 140
C402 50V3.3
R402 100K
R406 82K
R405 82K
R401 100K
C401 50V3.3
R407 140
C415 50V0.47
C452 0.033
R418 2.2K
C422 6V100
R404 220
C424 120P
C404 820P
C403 820P
C423 120P
R403 220
C421 6V100
R417 2.2K
R420 5.6K
R416 220
R410 3.3K
C408 0.0022
C406 470P
C405 470P
C407 0.0022
R409 3.3K
R415 220
R419 5.6K
C412 0.01
C414 0.001
R414 6.8K
C410 0.039
R412 100K
R411 100K
C409 0.039
R413 6.8K
C413 0.001
C411 0.01
C426 25V100
C425 25V100
C420 680P
C419 680P
R421 100K
R422 100K
R424 820K
R423 820K
D716
R721 150
C729 16V100
R720 560
12.5
13.1
18.2
C730 0.01
R435 1K
C728 25V1000
C330 0.0022
C329 0.0022
R934 5.6K
R429 330
R431 330
R432 330
R430 330
R426 820K
R428 820K
R425 820K
R427 820K
R434 2.2K
R433 2.2K
C427 330P
C428 330P
(S1-1)
(S1-2)
(S1-3)
(S1-4)
(S1-5)
(S2-1)
(S2-2)
(S2-3)
(S2-4)
(S3-1)
(S3-2)
(S3-3)
(S3-4)
J116
J122
J126
J127
J128
J124
J104
⊕
⊖
㉑
㉒
㉕

B FL display circuit


Manual tuning
Up
Down
(S912)
(S913)
J125
Memory
FM/AM preset tuning
1
2
3
4
5
6
7
8
FM
AM
(S901)
(S902)
(S903)
(S904)
(S905)
(S906)
(S907)
(S908)
(S909)
(S910)
(S911)
Display Tube (Fluorescent)
IC903 SVITC5067BP FL DRIVE
Q901, 902 2SC945 LOOP FILTER
Q903~905 2SC945 LOOP FILTER
IC901 SVIμPB553C-E PRE SCALER
IC902 SVIμPD1704CL CPU
Q911, 914 2SA564 BUFFER
Q906, 907 2SC1684 SWITCHING
Q915 2SA564 BUFFER
Q908 2SA564 SWITCHING
Q912 2SA564 BUFFER
Q909, 913 2SC828 DRIVE
X901
Z901
Z902
Z903
Z904
Z905
L901
J101
J102
J103
J117
J123
J126
J128


memory
kHz
MHz
stereo
AM
FM
Grid 1
Grid 2
Grid 3
Grid 4
Grid 5
Grid 6
Grid 7
Segment
a
b
c
d
e
f
g
Filament
MEMO
MHz FM
kHz
AM
ST
F
G1
G2
G3
G4
G5
G6
G7
Pin No.1
2
3
4
5
6
7
8
9
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34
35

● Fluorescent Display Tube (FL)

D Tuner circuit

Q201
2SC2778
BUFFER

E	(1.5)
C	(5.8)
B	(2.2)

Q110
2SD601
SWITCHING

E	0
C	0
B	0.6

Q203
2SD601
SWITCHING

E	0
C	12.4
B	0

Q111
2SB709
SWITCHING

E	12.5
C	12.4
B	11.9

Q204
2SB709
SWITCHING

E	12.5
C	0.8
B	12.4

Q109
2SD601
SWITCHING

E	0
C	0
B	0.6

Q108
2SD601
SWITCHING

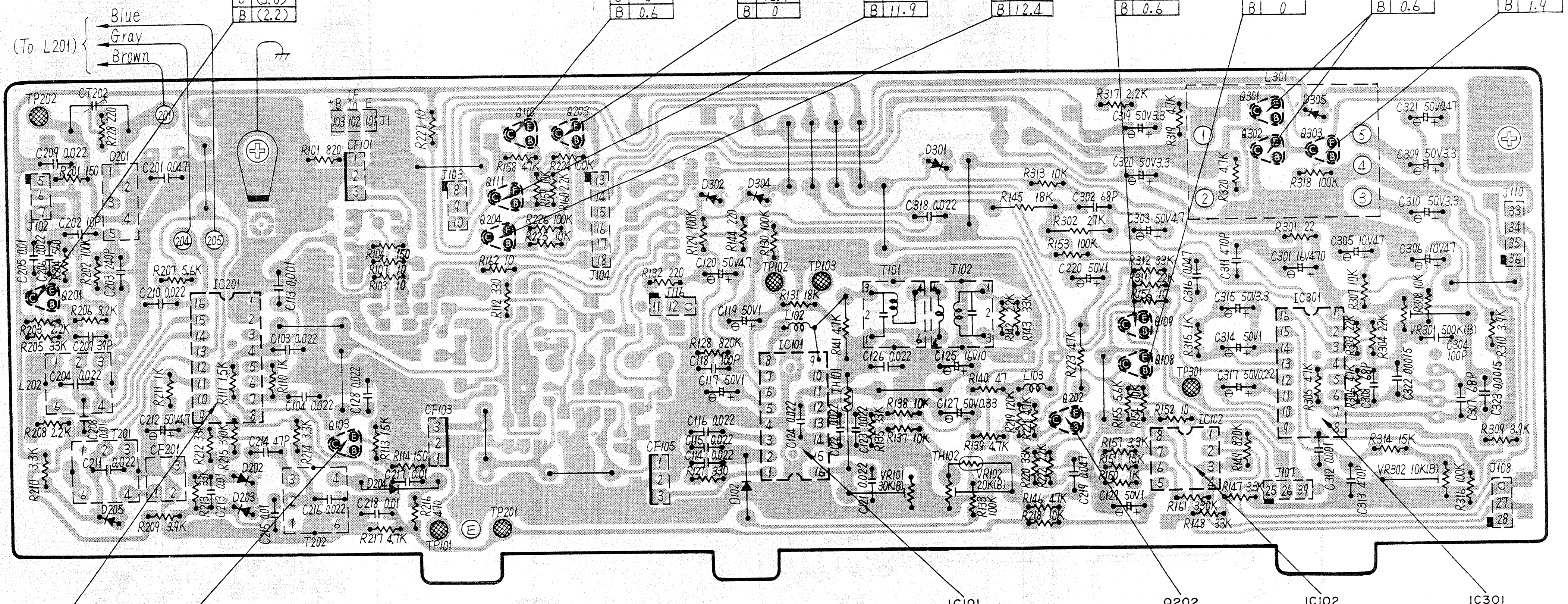
E	0
C	7
B	0

Q301, 302
2SD601
MUTING

E	0
C	0
B	0.6

Q303
2SB709
MUTING

E	2.5
C	0.6
B	1.9


(To L201)
Blue
Gray
Brown
TP202
CT202
R228 220
C209 0.022
D201
R201 150
C201 0.047
C202 10P
C203 240P
C205 0.01
Q201
R207 5.6K
R204 8.2K
R205 33K
C207 3P
L202
C204 0.022
R208 2.2K
T201
C211 0.022
CF201
D205
R209 3.9K
IC201
C210 0.022
C212 50V4.7
R212 33K
R215 390K
D202
D203
C214 47P
R211 1K
R111 1.5K
C103 0.022
R110 1K
C104 0.022
C113 0.001
C216 0.022
T202
C218 0.01
R217 4.7K
R216 470
Q103
R113 15K
R114 150
C128 0.022
CF103
R101 820
CF101
J101
R227 10
Q110
Q203
Q111
Q204
R158 4.7K
R224 100K
R226 100K
R162 10
J103
J104
D302
D304
R129 100K
R144 220
R130 100K
C120 50V4.7
R132 220
TP102
TP103
T101
T102
R131 18K
L102
C119 50V1
R128 820K
C118 100P
C117 50V1
IC101
C116 0.022
C124 0.022
C125 16V10
R140 47
L103
R138 10K
C127 50V0.33
R137 10K
R139 4.7K
TH101
TH102
VR101 30K(B)
VR102 20K(B)
CF105
D101
TP201
TP101
D301
R313 10K
R145 18K
C302 68P
R302 27K
R153 100K
C318 0.022
C220 50V1
C303 50V4.7
R273 4.7K
Q202
Q109
Q108
TP301
R155 5.6K
R152 10
IC102
R151 3.3K
C123 50V1
R161 330K
R148 33K
R147 3.3K
R149 820K
J107
R144 4.7K
L301
R317 2.2K
C319 50V3.3
Q301
Q302
Q303
Q305
R318 100K
R320 4.7K
C320 50V3.3
C321 50V47
C309 50V3.3
C310 50V3.3
R301 22
C301 16V470
C305 10V47
C306 10V47
C311 470P
C316 0.047
C315 50V3.3
C314 50V1
C317 50V0.22
R315 1K
IC301
R307 10K
R308 10K
VR301 500K(B)
C304 100P
R310 3.3K
R305 4.7K
R304 22K
C322 0.0015
C307 68P
C323 0.0015
R309 3.9K
R314 15K
VR302 10K(B)
C312 0.001
C313 470P
R316 100K
J108
J110

IC201
AN217
AM & FM IF AMP

1	0	9	0.9
2	0	10	1
3	—	11	0.8
4	6.4	12	0.5
5	1.1	13	0.6
6	0	14	1
7	1.1	15	1
8	5.2	16	0.6

Q103
2SC2778
BUFFER

E	4.5
C	6.4
B	5.2

IC101
SV1μPC1167C2
FM IF AMP & FM DET

1	2.4	9	6.3
2	2.4	10	6.3
3	2.4	11	11.3
4	0	12	6.8
5	0.4	13	0.5
6	6.1	14	0
7	6.4	15	5.8
8	6.3	16	5.8

Q202
2SD601
AF AMP

E	1.9
C	8.4
B	2.5

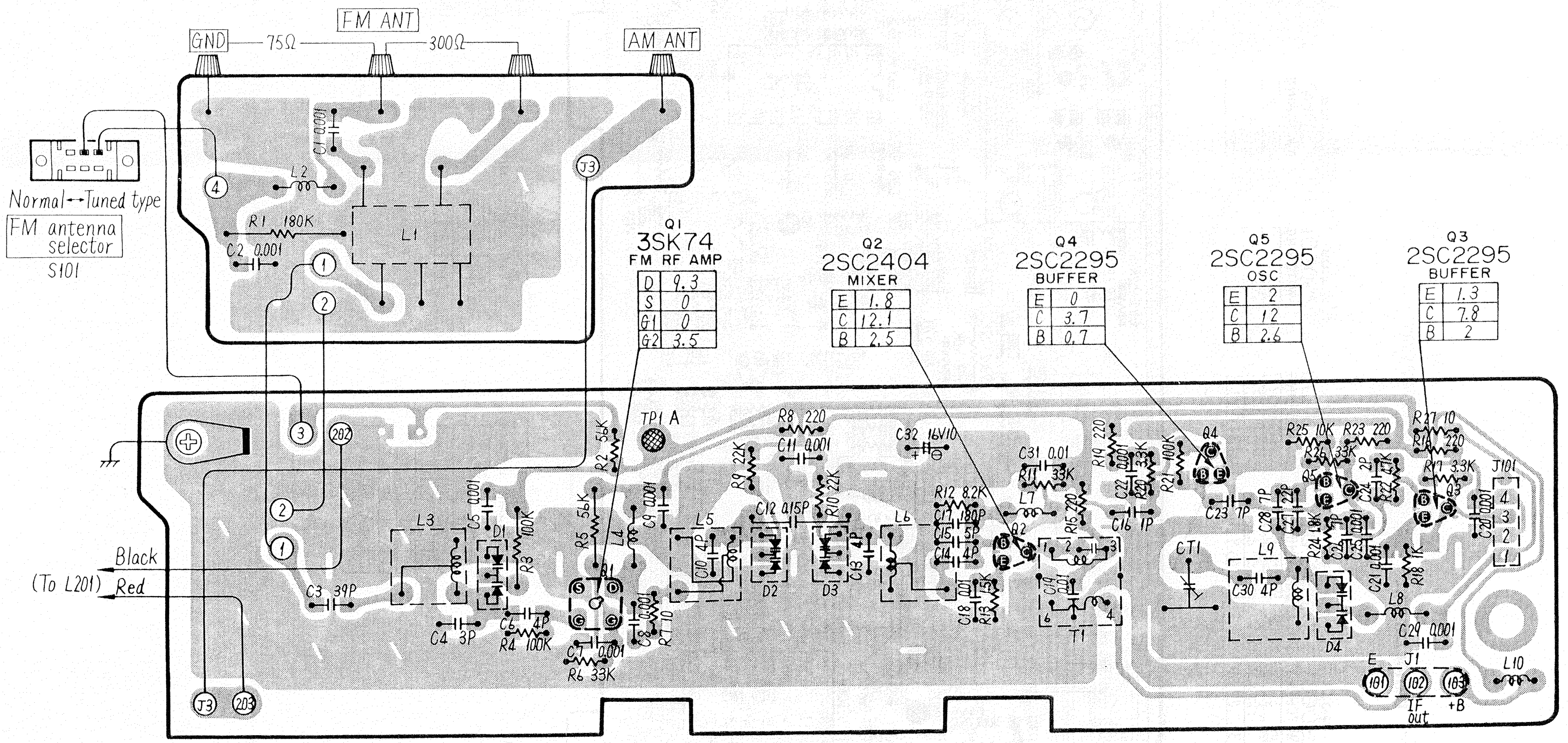
IC102
AN6552
MUTING & METER AMP

1	13.6
2	1.4
3	7
4	-15.5
5	0
6	0
7	1.5
8	15.5

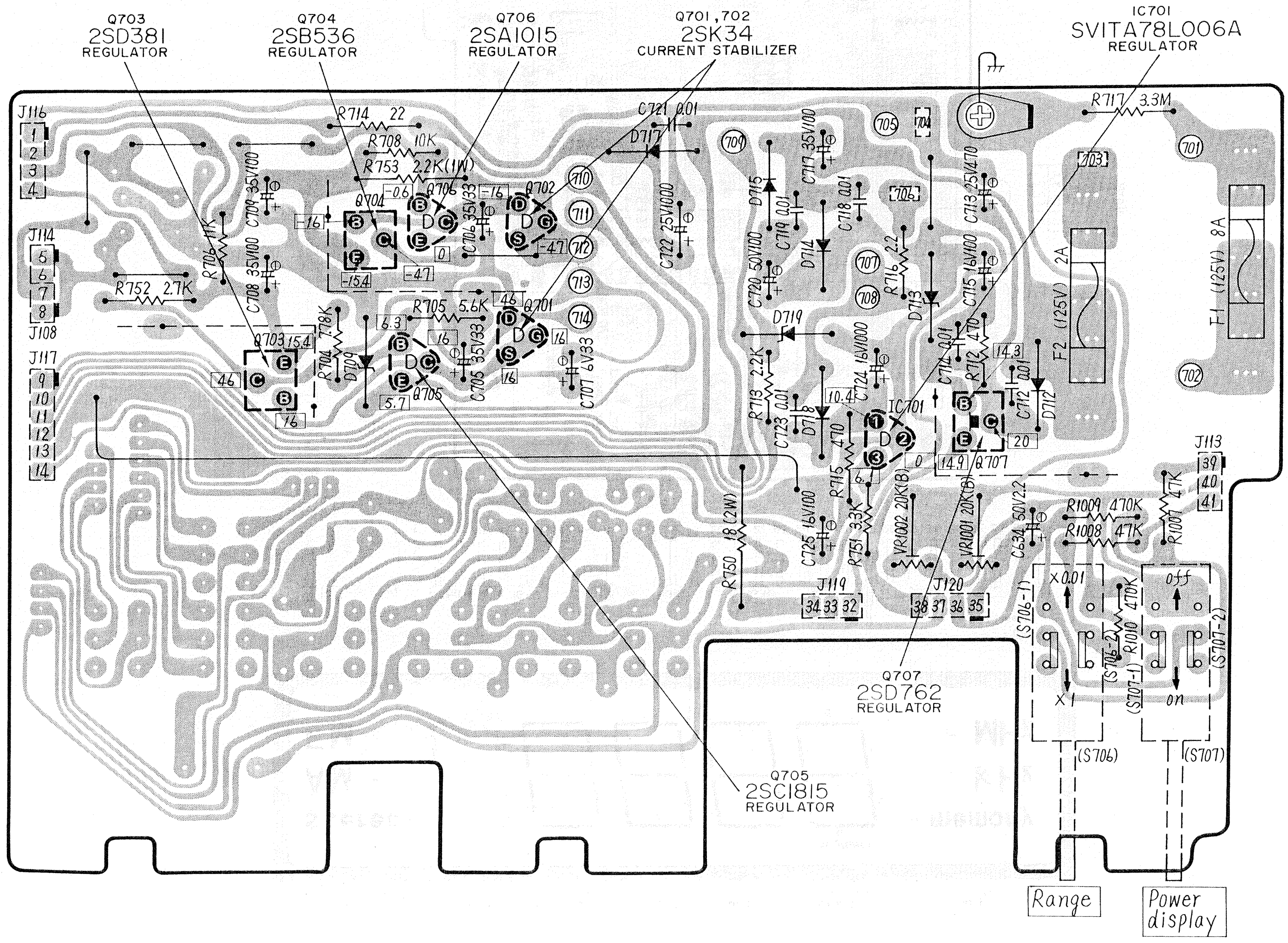
IC301
SV1μPC1161C
MPX

1	12	9	10.3
2	2.3	10	2.3
3	5.3	11	2.3
4	9.9	12	2.3
5	9.9	13	2.3
6	5.3	14	2.3
7	5.3	15	3.4
8	0	16	0.9

C FM RF circuit

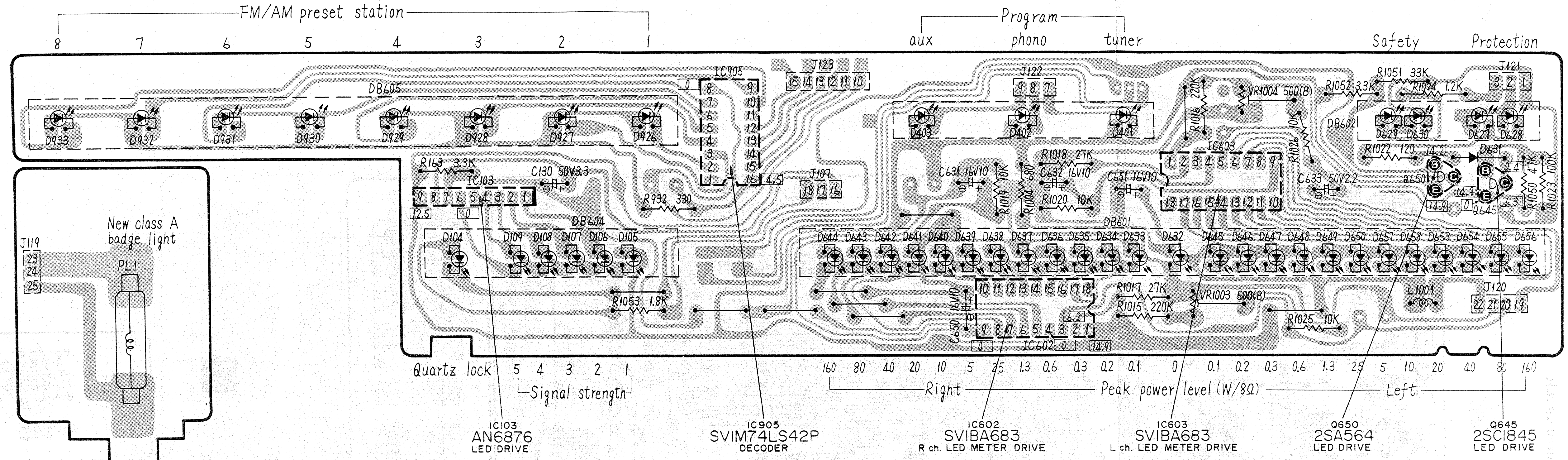

GND
75Ω
FM ANT
300Ω
AM ANT
Normal←→Tuned type
FM antenna selector
S101
Q1
3SK74
FM RF AMP
D 9.3
S 0
G1 0
G2 3.5
Q2
2SC2404
MIXER
E 1.8
C 12.1
B 2.5
Q4
2SC2295
BUFFER
E 0
C 3.7
B 0.7
Q5
2SC2295
OSC
E 2
C 12
B 2.6
Q3
2SC2295
BUFFER
E 1.3
C 7.8
B 2
TP1 A
Black
Red
(To L201)
J101
IF out
+B
E
J1
L10
L1
L2
R1 180K
C1 0.001
C2 0.001
C3 39P
C4 3P
R3 100K
R4 100K
R5 56K
R6 33K
R2 56K
R8 220
R9 22K
R10 22K
R12 8.2K
C12 0.15P
C17 180P
C32 16V10
R14 220
R15 220
R21 100K
C16 1P
C23 1P
C30 4P
CT1
R25 10K
R23 220
R17 10
R19 220
R11 3.3K
C29 0.001
D1
D2
D3
D4
L3
L4
L5
L6
L7
L8
L9
T1
Q1
Q2
Q3
Q4
Q5

E Voltage regulator circuit for tuner and pre-amplifier


Q703
2SD381
REGULATOR
Q704
2SB536
REGULATOR
Q706
2SA1015
REGULATOR
Q701,702
2SK34
CURRENT STABILIZER
IC701
SVITA78L006A
REGULATOR
Q707
2SD762
REGULATOR
Q705
2SC1815
REGULATOR
J116
J114
J108
J117
J113
J119
J120
R714 22
R708 10K
R753 2.2K(1W)
C721 0.01
D717
R717 3.3M
R706 11K
R752 2.7K
R705 5.6K
R704 7.78K
C709 35V100
C708 35V100
C706 35V33
C705 35V33
C707 6V33
C722 25V1000
C720 50V100
C719 0.01
C718 0.01
C717 35V100
C713 25V470
C715 16V1000
C714 0.01
C724 16V1000
C723 0.01
C725 16V100
C712 0.01
C634 50V22
R713 2.2K
R716 22
R715 470
R712 470
R751 3.3K
R750 18 (2W)
VR1002 20K(B)
VR1001 20K(B)
R1009 470K
R1008 47K
R1007 47K
R1010 470K
D715
D714
D719
D713
D718
D712
F1 (125V) 8A
F2 (125V) 2A
(S706-1)
(S706-2)
(S707-1)
(S707-2)
(S706)
(S707)
x0.01
x1
off
on
Range
Power display

F

LED display circuit

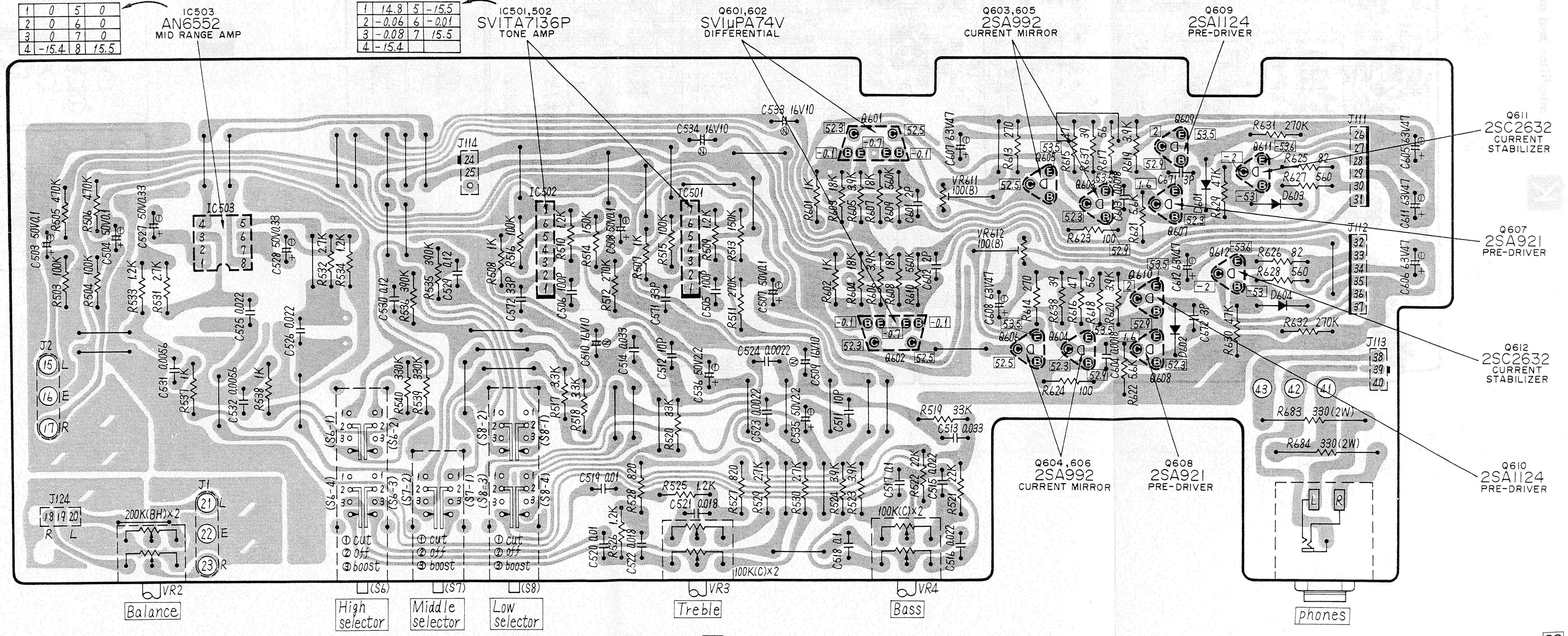

FM/AM preset station
8
7
6
5
4
3
2
1
Program
aux
phono
tuner
Safety
Protection
DB605
D933
D932
D931
D930
D929
D928
D927
D926
IC905
J123
J122
J121
D403
D402
D401
R1016 220K
VR1004 500(B)
R1052 3.3K
R1051 33K
R1024 1.2K
DB602
D629
D630
D627
D628
R1022 120
D631
Q650
Q645
R1026 10K
C633 50V2.2
R1050 47K
R1023 100K
IC603
R1018 27K
C632 16V10
C631 16V10
C651 16V10
R1019 10K
R1004 680
R1020 10K
J107
R163 3.3K
IC103
C130 50V3.3
R932 330
J119
New class A badge light
PL1
DB604
D104
D109
D108
D107
D106
D105
R1053 1.8K
DB601
D644 D643 D642 D641 D640 D639 D638 D637 D636 D635 D634 D633 D632
D645 D646 D647 D648 D649 D650 D651 D652 D653 D654 D655 D656
R1017 27K
R1015 220K
VR1003 500(B)
C650 16V10
IC602
R1025 10K
L1001
J120
Quartz lock
5 4 3 2 1
Signal strength
160 80 40 20 10 5 2.5 1.3 0.6 0.3 0.2 0.1 0 0.1 0.2 0.3 0.6 1.3 2.5 5 10 20 40 80 160
Right
Peak power level (W/8Ω)
Left
IC103
AN6876
LED DRIVE
IC905
SVIM74LS42P
DECODER
IC602
SVIBA683
R ch. LED METER DRIVE
IC603
SVIBA683
L ch. LED METER DRIVE
Q650
2SA564
LED DRIVE
Q645
2SC1845
LED DRIVE

G

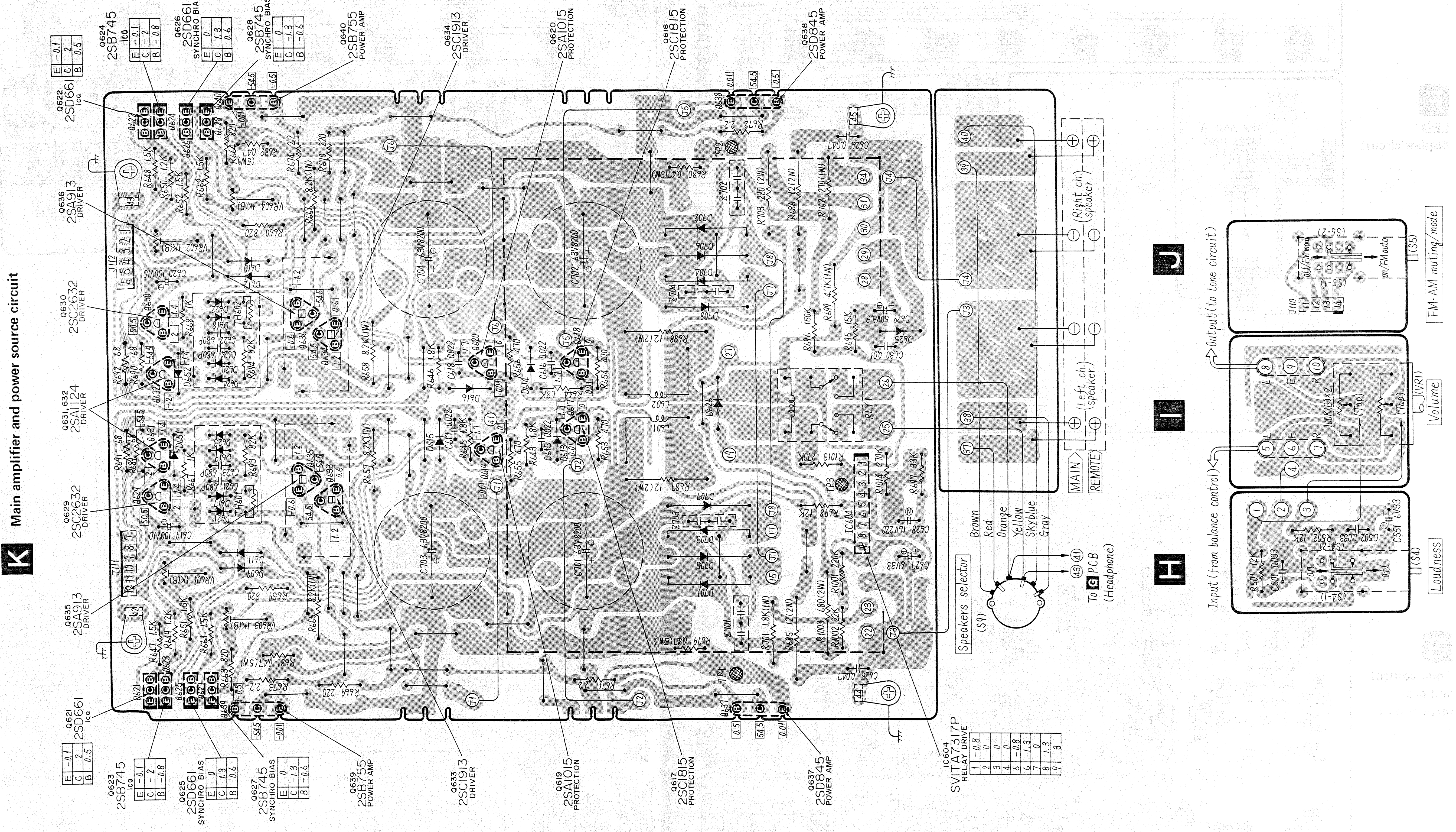
Tone control and pre-drive circuit

1	0	5	0
2	0	6	0
3	0	7	0
4	-15.4	8	15.5

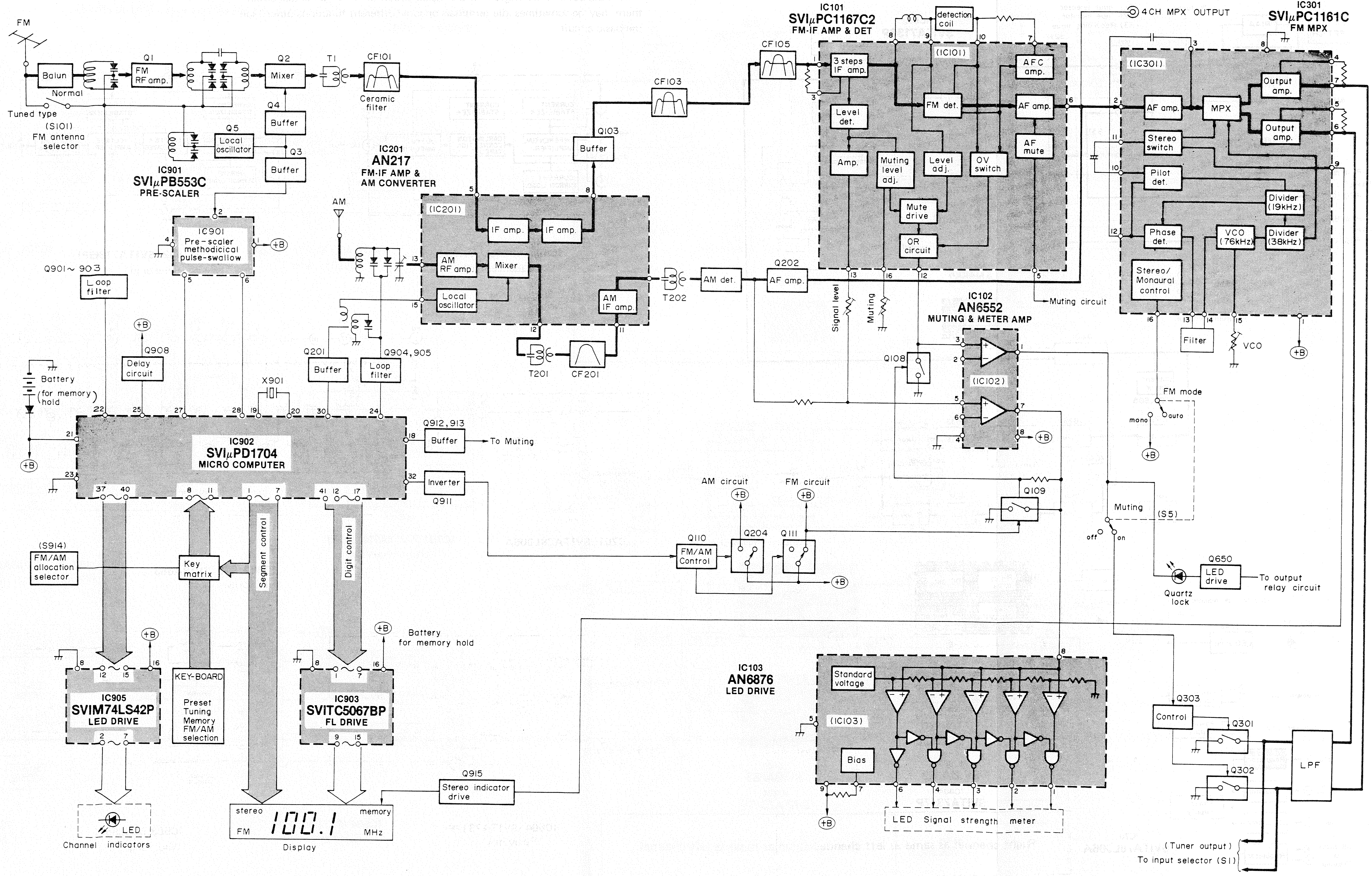
1	14.8	5	-15.5
2	-0.06	6	-0.01
3	-0.08	7	15.5
4	-15.4		


IC503
AN6552
MID RANGE AMP
IC501,502
SVITA7136P
TONE AMP
Q601,602
SVIμPA74V
DIFFERENTIAL
Q603,605
2SA992
CURRENT MIRROR
Q609
2SA1124
PRE-DRIVER
Q611
2SC2632
CURRENT STABILIZER
Q607
2SA921
PRE-DRIVER
Q612
2SC2632
CURRENT STABILIZER
Q610
2SA1124
PRE-DRIVER
Q604,606
2SA992
CURRENT MIRROR
Q608
2SA921
PRE-DRIVER
IC503
IC502
IC501
J114
J111
J112
J113
J124
J2
J1
C533 16V10
C534 16V10
VR611 100(B)
VR612 100(B)
R631 270K
R625 82
R627 560
D603
R626 82
R628 560
D604
R632 270K
R519 33K
C513 0.033
R683 330(2W)
R684 330(2W)
C524 0.0022
R525 1.2K
C521 0.018
200K(BH)×2
100K(C)×2
L
E
R
① cut
② off
③ boost
VR2
Balance
(S6)
High selector
(S7)
Middle selector
(S8)
Low selector
VR3
Treble
VR4
Bass
phones

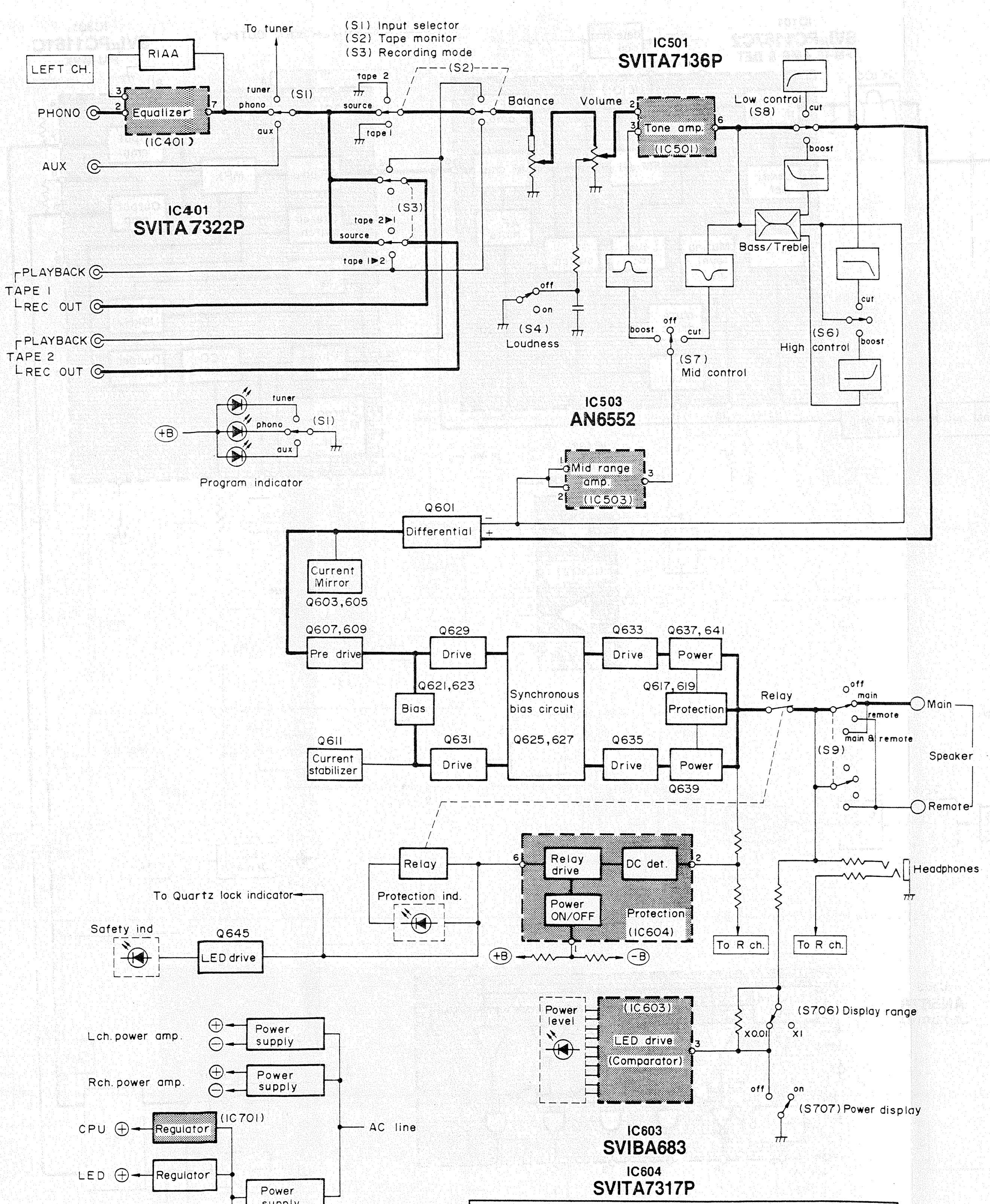
K Main amplifier and power source circuit


Q622 2SD661 Ica
Q624 2SB745 Ica
Q626 2SD661 SYNCHRO BIAS
Q628 2SB745 SYNCHRO BIAS
Q640 2SB755 POWER AMP
Q634 2SC1913 DRIVER
Q620 2SA1015 PROTECTION
Q618 2SC1815 PROTECTION
Q638 2SD845 POWER AMP
Q636 2SA913 DRIVER
Q630 2SC2632 DRIVER
Q631, 632 2SA1124 DRIVER
Q629 2SC2632 DRIVER
Q635 2SA913 DRIVER
Q621 2SD661 Ica
Q623 2SB745 Ica
Q625 2SD661 SYNCHRO BIAS
Q627 2SB745 SYNCHRO BIAS
Q639 2SB755 POWER AMP
Q633 2SC1913 DRIVER
Q619 2SA1015 PROTECTION
Q617 2SC1815 PROTECTION
Q637 2SD845 POWER AMP
IC604 SVITA7317P RELAY DRIVE
C704 63V8200
C702 63V8200
C703 63V8200
C701 63V8200
RLY1
L601
L602
TP1
TP2
TP3
Right ch. speaker
Left ch. speaker
MAIN
REMOTE
Speakers selector (S9)
Brown
Red
Orange
Yellow
Skyblue
Gray
To G PCB (Headphone)
H
I
J
Input (from balance control)
Output (to tone circuit)
Loudness (S4)
Volume (VR1)
FM·AM muting/mode (S5)

■ BLOCK DIAGRAM (Tuner and FL Display)


FM
Balun
Normal
Tuned type
(S101)
FM antenna
selector
Q1
FM
RF amp.
Q2
Mixer
T1
CF101
Ceramic
filter
Q4
Buffer
Q5
Local
oscillator
Q3
Buffer
IC901
SVIμPB553C
PRE-SCALER
IC901
Pre-scaler
methodicical
pulse-swallow
Q901～903
Loop
filter
Q908
Delay
circuit
+B
Battery
(for memory
hold)
IC201
AN217
FM-IF AMP &
AM CONVERTER
AM
(IC201)
IF amp.
IF amp.
AM
RF amp.
Mixer
Local
oscillator
AM
IF amp.
Q201
Buffer
Q904,905
Loop
filter
X901
T201
CF201
T202
CF103
Q103
Buffer
CF105
IC101
SVIμPC1167C2
FM-IF AMP & DET
detection
coil
(IC101)
3 steps
IF amp.
Level
det.
FM det.
AFC
amp.
AF amp.
AF
mute
Amp.
Muting
level
adj.
Level
adj.
OV
switch
Mute
drive
OR
circuit
AM det.
Q202
AF amp.
Signal level
Muting
Muting circuit
IC102
AN6552
MUTING & METER AMP
(IC102)
Q108
Q109
4CH MPX OUTPUT
IC301
SVIμPC1161C
FM MPX
(IC301)
AF amp.
MPX
Output
amp.
Output
amp.
Stereo
switch
Pilot
det.
Divider
(19kHz)
Phase
det.
VCO
(76kHz)
Divider
(38kHz)
Stereo/
Monaural
control
Filter
VCO
FM mode
mono
auto
Muting
(S5)
off
on
Q650
LED
drive
Quartz
lock
To output
relay circuit
IC902
SVIμPD1704
MICRO COMPUTER
Q912,913
Buffer
To Muting
Inverter
Q911
AM circuit
FM circuit
Q110
FM/AM
Control
Q204
Q111
(S914)
FM/AM
allocation
selector
Key
matrix
Segment control
Digit control
IC905
SVIM74LS42P
LED DRIVE
KEY-BOARD
Preset
Tuning
Memory
FM/AM
selection
IC903
SVITC5067BP
FL DRIVE
Battery
for memory hold
LED
Channel indicators
stereo
memory
FM
100.1
MHz
Display
Q915
Stereo indicator
drive
IC103
AN6876
LED DRIVE
(IC103)
Standard
voltage
Bias
LED Signal strength meter
Q303
Control
Q301
Q302
LPF
(Tuner output)
To input selector (S1)

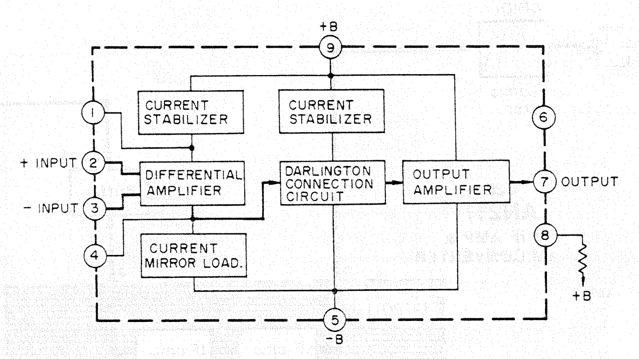
BLOCK DIAGRAM (Amplifier and Tone control)


LEFT CH.
RIAA
PHONO
Equalizer
(IC401)
AUX
IC401
SVITA7322P
To tuner
(S1) Input selector
(S2) Tape monitor
(S3) Recording mode
tuner
phono
aux
(S1)
tape 2
source
tape 1
(S2)
(S3)
tape 2▶1
source
tape 1▶2
Balance
Volume
IC501
SVITA7136P
Tone amp.
(IC501)
Low control
(S8)
cut
boost
Bass/Treble
off
On
(S4)
Loudness
boost
off
cut
(S7)
Mid control
(S6)
High control
PLAYBACK
TAPE 1
REC OUT
PLAYBACK
TAPE 2
REC OUT
+B
tuner
phono
aux
(S1)
Program indicator
IC503
AN6552
Mid range amp.
(IC503)
Q601
Differential
Current Mirror
Q603,605
Q607,609
Pre drive
Q629
Drive
Q621,623
Bias
Synchronous bias circuit
Q625,627
Q633
Drive
Q637,641
Power
Q617,619
Protection
Q611
Current stabilizer
Q631
Drive
Q635
Drive
Power
Q639
Relay
off
main
remote
main & remote
(S9)
Main
Speaker
Remote
Relay
Protection ind.
To Quartz lock indicator
Safety ind
Q645
LED drive
Relay drive
DC det.
Power ON/OFF
Protection
(IC604)
+B
-B
To R ch.
To R ch.
Headphones
Power level
(IC603)
LED drive
(Comparator)
X0.01
X1
(S706) Display range
off
on
(S707) Power display
IC603
SVIBA683
IC604
SVITA7317P
Lch. power amp.
Rch. power amp.
Power supply
Power supply
CPU
LED
Tuner
Equalizer & Preamp.
Regulator
Regulator
Regulator
Regulator
(IC701)
Power supply
AC line
IC701
SVITA78L006A

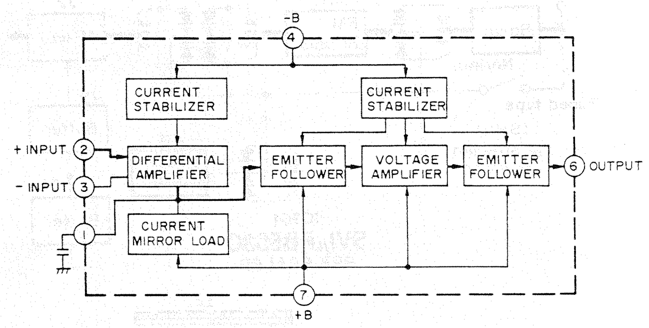
Right channel as same as left channel.

BLOCK DIAGRAM OF IC'S

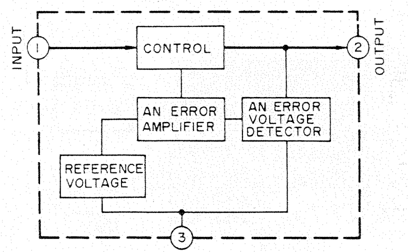
This is the basic block diagram of the inside circuit of IC. In an actual circuit, there may be sometimes idle terminals or some different functions other than the basic circuit.


+B
9
1
CURRENT STABILIZER
CURRENT STABILIZER
6
+ INPUT 2
- INPUT 3
DIFFERENTIAL AMPLIFIER
DARLINGTON CONNECTION CIRCUIT
OUTPUT AMPLIFIER
7 OUTPUT
8
4
CURRENT MIRROR LOAD.
+B
5
-B

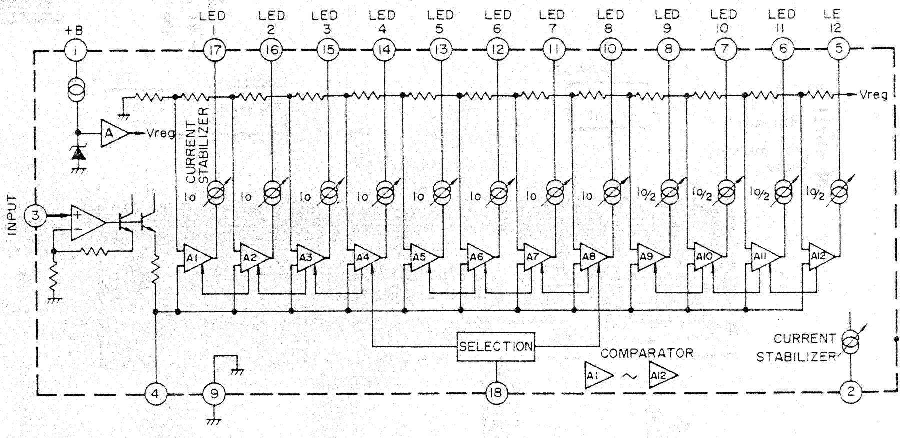
IC401, 402 (SVITA7322P)
Equalizer amp.


-B
4
CURRENT STABILIZER
CURRENT STABILIZER
+ INPUT 2
- INPUT 3
DIFFERENTIAL AMPLIFIER
EMITTER FOLLOWER
VOLTAGE AMPLIFIER
EMITTER FOLLOWER
6 OUTPUT
1
CURRENT MIRROR LOAD
7
+B

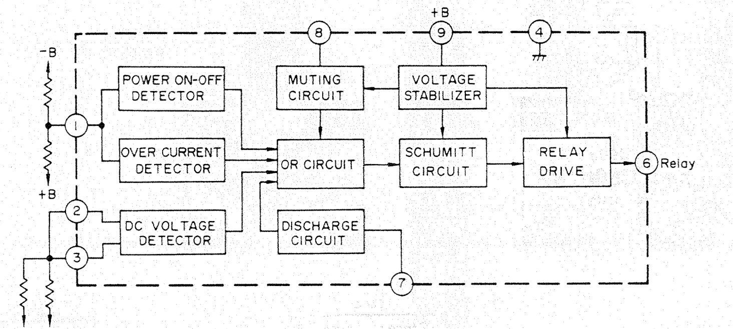
IC501, 502 (SVITA7136P)
Tone amp.


INPUT 1
CONTROL
2 OUTPUT
AN ERROR AMPLIFIER
AN ERROR VOLTAGE DETECTOR
REFERENCE VOLTAGE
3
COMMON

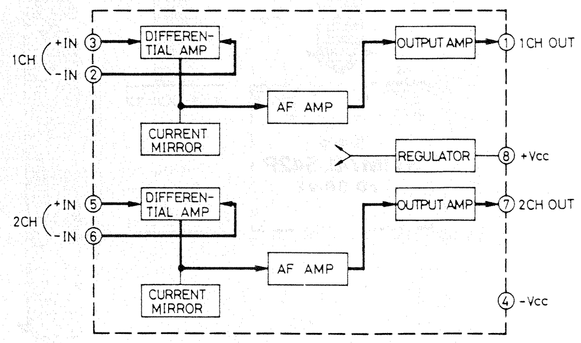
IC701 (SVITA78L006A)
Voltage regulator


+B
LED 1
LED 2
LED 3
LED 4
LED 5
LED 6
LED 7
LED 8
LED 9
LED 10
LED 11
LE 12
1
17
16
15
14
13
12
11
10
9
7
6
5
Vreg
Vreg
CURRENT STABILIZER
INPUT 3
Io
Io/2
A1
A2
A3
A4
A5
A6
A7
A8
A9
A10
A11
A12
SELECTION
COMPARATOR
A1 ~ A12
CURRENT STABILIZER
4
9
18
2

IC602, 603 (SVIBA683)
LED power meter drive


+B
-B
8
9
4
1
POWER ON-OFF DETECTOR
MUTING CIRCUIT
VOLTAGE STABILIZER
OVER CURRENT DETECTOR
OR CIRCUIT
SCHUMITT CIRCUIT
RELAY DRIVE
6 Relay
+B
2
3
DC VOLTAGE DETECTOR
DISCHARGE CIRCUIT
7
Lch.
Rch.

IC604 (SVITA7317P)
Relay drive


1CH
+IN 3
-IN 2
DIFFEREN-TIAL AMP
OUTPUT AMP
1 1CH OUT
AF AMP
CURRENT MIRROR
REGULATOR
8 +Vcc
2CH
+IN 5
-IN 6
DIFFEREN-TIAL AMP
OUTPUT AMP
7 2CH OUT
AF AMP
CURRENT MIRROR
4 -Vcc

IC503 (AN6552)
Mid. range amp

Printed in Japan

■ REPLACEMENT PARTS LIST....... Electrical Parts

Notes: 1. Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.
2. ⚠ indicates that only parts specified by the manufacturer be used for safety.
3. Bracketed indications in Ref. No. columns specify the area. Parts without these indications can be used for all areas.

Areas

* [M] is available in U.S.A.
* [MC] is available in Canada.

Ref. No.		Part No.	Part Name & Description
INTEGRATED CIRCUITS			
IC101		SVIUPC1167C2	IC, FM IF Amp. & FM Detector
IC102		AN6552F	IC, Muting & LED Meter Amplifier
IC103		AN6876	IC, LED Driver
IC201		AN217P–BB	IC, AM & FM IF Amplifier
IC301		SVIUPC1161C	IC, FM Multiplex
IC401, 402		SVITA7322P	IC, Equalizer Amplifier
IC501, 502		SVITA7136P	IC, Tone Amplifier
IC503		AN6552F	IC, Mid Range Amplifier
IC602, 603		SVIBA683	IC, LED Power Meter Driver
IC604		SVITA7317P	IC, Relay Driver
IC701		SVITA78L006A	IC, Voltage Regulator
IC901		SVIUPB553C–E	IC, Pre-Scaler
IC902		SVIUPD1704CL	IC, Micro-Computer
IC903		SVITC5067BP	IC, FL Driver
IC905		SVIM74LS42P	IC, Decoder
TRANSISTORS			
Q1		3SK74–L1	Transistor, FM RF Amplifier [FET]
Q2		2SC2404	Transistor, FM Mixer (Chip)
Q3, 4, 5		2SC2295	Transistor, Buffer & FM Oscillator (Chip)
Q103, 201		2SC2778	Transistor, FM IF Amplifier & AM Buffer (Chip)
Q108, 109, 110, 202, 203		2SD601	Transistor, Switching & AF Amplifier (Chip)
Q111, 204, 303		2SB709	Transistor, Switching (Chip)
Q301, 302		2SD601	Transistor, Mute Switching (Chip)
Q601, 602		SVIUPA74V–P	Transistor, Differential Amplifier (Use in rands P or F)
Q603, 604, 605, 606		2SA992	Transistor, Current Mirror
Q607, 608		2SA921–T	Transistor, Pre-Driver (Use in ranks R, S or T)
Q609, 610		2SA1124–R	Transistor, Pre-Driver (Use in ranks R or S)
Q611, 612		2SC2632–R	Transistor, Current Stabilizer (Use in ranks R or S)
Q617, 618		2SC1815–Y	Transistor, Protection (Use in ranks Y or O)
Q619, 620		2SA1015–Y	Transistor, Protection (Use in ranks Y or O)
Q621, 622, 625, 626		2SD661–S	Transistor, Icq & Synchronous Bias (Use in ranks R or S)
Q623, 624, 627, 628		2SB745–S	Transistor, Icq & Synchronous Bias (Use in ranks R or S)
Q629, 630		2SC2632–R	Transistor, Driver (Use in ranks R or S)
Q631, 632		2SA1124–R	Transistor, Driver (Use in ranks R or S) (Use pair ranks as same as Q629 ~ 631 and Q632)
Q633, 634		2SC1913–R	Transistor, Driver (Use in ranks R or Q)
Q635, 636		2SA913–R	Transistor, Driver (Use in ranks R or Q) (Use pair ranks as same as Q633 ~ 635 and Q636)
Q637, 638		2SD845–R	Transistor, Power (Use in ranks R or O)
Q639, 640		2SB755–R	Transistor, Power (Use in ranks R or O) (Use pair ranks as same as Q637, 638, 639 and Q640)
Q645		2SC1845	Transistor, LED Driver
Q650		**2SA666AI–R**	Transistor, LED Driver
Q701, 702		2SK34–D1	Transistor, Current Stabilizer [FET]
Q703		2SD381A–L9	Transistor, Regulator
Q704		2SB536A–L9	Transistor, Regulator
Q705		2SC1815–Y	Transistor, Regulator (Use in ranks Y or O)
Q706		2SA1015–Y	Transistor, Regulator (Use in ranks Y or O)
Q707, 708		2SD762–O	Transistor, Regulator (Use in ranks O or P)
Q901, 902, 903 904, 905		**2SC945–P2**	Transistor, Loop Filter
Q906, 907		2SC1684–R	Transistor, Switching
Q908, 911, 912 914, 915		**2SA666AI–R**	Transistor, Switching & Buffer
Q909, 913		**2SC1328–T**	Transistor, Driver
DIODES			
D1, 2, 3, 4		SVDBB204	Diode, Variable Capacitor (for FM)
D203, 205, 302, 304, 305		MA151K	Diode, AGC & Switching
D102		**MA162A**	Diode
D201		SVDBB113	Diode, Variable Capacitor (for AM)
D202, 301		**MA162A**	Diode, AGC & Switching (Product Part No. : MA151A)
D104 ~ 107, 401, 402, 403 627, 628, 641 642, 643, 644 653 ~ 656, 926 ~ 933		LN217RP	Light Emitting Diode, Red
D108, 109, 629, 630, 632, 633 ~ 636, 645 ~ 648		LN317GP	Light Emitting Diode, Green
D204, 906		**2–OA99**	Diode, AM Detector
D601, 602 609 ~ 616 625, 631		**MA162A**	Diode
D603, 604		MA27B	Diode, Current Stabilizer
D617 ~ 624		**20A90**	Diode, Synchronous Bias
D626		**SVDSR1K2**	Diode, Relay Pulse Killer
D637 ~ 640, 649, 650, 657, 658		LN417YP	Light Emitting Diode, Yellow
D651, 652		**SVDMZ304B**	Diode, 4V Zener
D701 ~ 708	⚠	**SVDS3V40**	Rectifier
D709		SVDMZ306B2	Diode, 6V Zener
D902		SVDMZ303A	Diode, 3V Zener
D712, 714, 715, 717, 718, 925		**SVDSR1K2**	Rectifier
D713		**SVDEQA0115R**	Diode, 15V Zener
D716		**SVDEQA0113RA**	Diode, 13V Zener
D719		SVDMZ336B	Diode, 36V Zener
D901, 903, 904, 905, 907, 908, 909, 910, 913 ~920, 922, 923, 924, 935, 936		**MA162A**	Diode
D921		**RVDRD6R2EB**	Diode, 6.2V Zener
D934		SVDMZ327B	Diode, 27V Zener
COLIS and TRANSFORMERS			
L1		SLAA4W1–3	Coil, FM Antenna, Balun
L2, 4, 8		SLQX39G–M	Coil, Choke
L3		SLA4P43	Coil, FM Antenna
L5, 6		SLD4P43	Coil, FM RF Detector
L7		RLQY15G5–Y	Coil, Choke
L9		SLO4P85	Coil, FM Local Oscillator
L10, 103		SLQX101–3M	Coil, Choke
L102		SLQW270–1K	Coil, Choke
L201		SLF2D69	Coil, AM Ferrite Bar Antenna
L202		SLO2C25–P	Coil, AM Local Oscillator
L301		SLMA1Z3–Z	Coil, Low Pass Filter
L601, 602		SLQY15G–30	Coil, Choke
L901		**RLQY25S2**	Coil, Choke
L1001		SLQX101–3M	Coil, Choke
T1		SLI4C109	Transformer, FM IF
T101		SLI4C511–K	Transformer, FM IF, Discriminator
T102		SLI4C513–K	Transformer, FM IF, Discriminator
T201		SLI2C127	Transformer, AM IF

■ HOW TO REPLACE CHIPS

(RESISTOR, CAPACITOR AND JUM

1. Remove solder from chip by using solder suc
2. Remove chip with tweezers by rotating it w ing solder as shown in fig. 1.
3. Solder circuit board first and then solder direction of the arrow as shown in fig. 2.

Notes:

1. Do not use chip again which is removed fr circuit board.
2. Use lead wire with insulator for replacemen chip jumper.

Color	Original Parts N
Black	Chip Resistor and
Brown, White or Green	Chip Capac

Ref. No.		Part No.	Part Name & Descrip
T202		SLI2C413R	Transformer, AM IF
T701	⚠	SLT5R43	Transformer, Power Source
CERAMIC FILTERS			
CF101, 105		SVFE107MM–A	Ceramic Filter, FM 10.7MHz,
CF103		SVFE107MX2–A	Ceramic Filter, FM 10.7MHz,
CF201		SVFSFP450H	Ceramic, Filter, AM 450kHz
CRYSTAL			
X901		SVQ43U452	Crystal, 4.5MHz, Counter Osc
VARIABLE RESISTORS			
VR1		EWFMSAF25B15	Volume Control, 100kΩ (B)
VR2		EWJEDA090252	Balance Control, 200kΩ (BH)
VR3		EWJFCO090C15	Treble Control, 100kΩ (C) Sp
VR4		EWJFCY090530	Bass Control, 100kΩ (C) Spec
VR101		EVNK4AA00B34	Muting Level Adjustment, 30
VR102		**EVNM4AA00B24**	Signal LED Meter Adjustment
VR301		EVNM4AA00B55	Separation Adjustment, 500k
VR302		**EVNM4AA00B14**	PLL MPX Adjustment, 10kΩ
VR601 ~ 604		**EVNM4AA00B13**	Power Amplifier Adjustment,
VR611, 612		EVN21AA00B12	DC Balance Adjustment, 100
VR1001, 1002		**EVNM4AA00B24**	Power LED Meter Adjustmen
VR1003, 1004		**EVNM4AA00B52**	Power LED Meter Adjustmen
VARIABLE CAPACITORS			
CT1		ECV1ZW06X32E	Trimmer, FM Local Oscillato
CT201		SVCTY121B269	Trimmer, AM Antenna
THERMISTERS			
TH101, 102 601, 602		ERTD2FHL103S	Thermister, Thermal Compen
LAMP			
PL1	⚠	XAM43P	Lamp, New Class A Light, 12
FUSES			
F1	⚠	XBA1F80NU14	Fuse, Power Source, 8A (125
F2	⚠	XBA1F20NU14	Fuse, Power Source, 2A (125
COMPONENT COMBINATIONS			
Z701 ~ 704		EXRFS203ZS	Component Combination, 0.
Z901, 902		EXBP87104K	Component Combination, 10
Z903, 904		EXFP7331M	Component Combination, 33
Z905		EXRP182K104C	Component Combination, 0.0018μF &
SWITCHES			
S1		ESA26143	Switch, Selector
S2		ESA2631	Switch, Tape Monitor

■ HOW TO REPLACE CHIPS

(RESISTOR, CAPACITOR AND JUMPER)

1. Remove solder from chip by using solder sucker.
2. Remove chip with tweezers by rotating it while removing solder as shown in fig. 1.
3. Solder circuit board first and then solder chip in the direction of the arrow as shown in fig. 2.

Notes:

1. Do not use chip again which is removed from printed circuit board.
2. Use lead wire with insulator for replacement instead of chip jumper.

Color	Original Parts Name
Black	Chip Resistor and Jumper
Brown, White or Green	Chip Capacitor

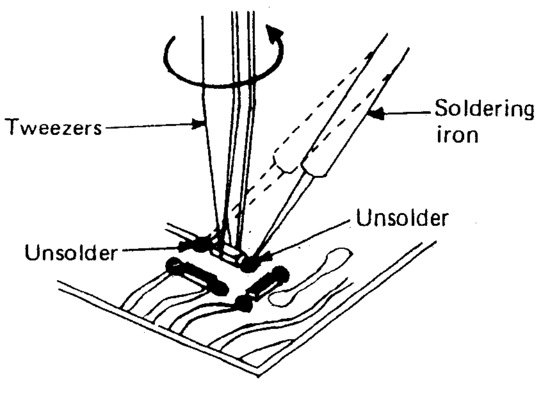


Fig. 1

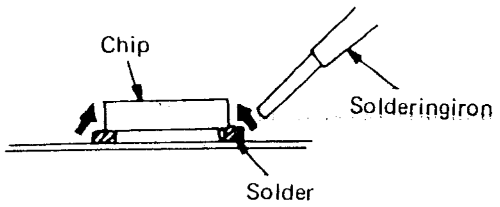


Fig. 2

SA-616

Ref. No.		Part No.	Part Name & Description
T202		SLI2C413R	Transformer, AM IF
T701	⚠	SLT5R43	Transformer, Power Source

CERAMIC FILTERS

Ref. No.		Part No.	Part Name & Description
CF101, 105		SVFE107MM−A	Ceramic Filter, FM 10.7MHz, Red
CF103		SVFE107MX2−A	Ceramic Filter, FM 10.7MHz, Red
CF201		SVFSFP450H	Ceramic, Filter, AM 450kHz

CRYSTAL

Ref. No.		Part No.	Part Name & Description
X901		SVQ43U452	Crystal, 4.5MHz, Counter Oscillator

VARIABLE RESISTORS

Ref. No.		Part No.	Part Name & Description
VR1		EWFMSAF25B15	Volume Control, 100kΩ (B)
VR2		EWJEDA090252	Balance Control, 200kΩ (BH)
VR3		EWJFCO090C15	Treble Control, 100kΩ (C) Special
VR4		EWJFCY090530	Bass Control, 100kΩ (C) Special
VR101		EVNK4AA00B34	Muting Level Adjustment, 30kΩ (B)
VR102		**EVNM4AA00B24**	Signal LED Meter Adjustment, 20kΩ (B)
VR301		EVNM4AA00B55	Separation Adjustment, 500kΩ (B)
VR302		**EVNM4AA00B14**	PLL MPX Adjustment, 10kΩ (B)
VR601 ~ 604		**EVNM4AA00B13**	Power Amplifier Adjustment, 1kΩ (B)
VR611, 612		EVN21AA00B12	DC Balance Adjustment, 100Ω (B)
VR1001, 1002		**EVNM4AA00B24**	Power LED Meter Adjustment, 20kΩ (B)
VR1003, 1004		**EVNM4AA00B52**	Power LED Meter Adjustment, 500Ω (B)

VARIABLE CAPACITORS

Ref. No.		Part No.	Part Name & Description
CT1		ECV1ZW06X32E	Trimmer, FM Local Oscillator
CT201		SVCTY121B269	Trimmer, AM Antenna

THERMISTERS

Ref. No.		Part No.	Part Name & Description
TH101, 102 601, 602		ERTD2FHL103S	Thermister, Thermal Compensation, 10kΩ

LAMP

Ref. No.		Part No.	Part Name & Description
PL1	⚠	XAM43P	Lamp, New Class A Light, 12,6V 0.3A

FUSES

Ref. No.		Part No.	Part Name & Description
F1	⚠	XBA1F80NU14	Fuse, Power Source, 8A (125V)
F2	⚠	XBA1F20NU14	Fuse, Power Source, 2A (125V)

COMPONENT COMBINATIONS

Ref. No.		Part No.	Part Name & Description
Z701 ~ 704		EXRFS203ZS	Component Combination, 0.01μF (X2)
Z901, 902		EXBP87104K	Component Combination, 100kΩ (X7)
Z903, 904		EXFP7331M	Component Combination, 330pF (X7)
Z905		EXRP182K104C	Component Combination, 0.0018μF & 100kΩ

SWITCHES

Ref. No.		Part No.	Part Name & Description
S1		ESA26143	Switch, Selector
S2		ESA2631	Switch, Tape Monitor
S3		ESA26521	Switch, Recording Mode
S4, 5		SSL149	Switch, FM·AM Muting/Loudness
S6, 8		SSL159	Switch, High & Low Boost/Cut
S7		SSL151	Switch, Mid Range Boost/Cut
S9		SSR145−1	Switch, Speaker
S10	⚠	SSL133	Switch, Power Source
S101, 914		ESD14116	Switch, FM Antenna/Allocation
S706, 707		SSH283	Switch, Power Display/Range
S901 ~ 913		SSG1	Switch, Memory/Preset/FM·AM/Manual

FLUORESCENT DISPLAY TUBE

Ref. No.		Part No.	Part Name & Description
FL		SAD7MT09ZA	Fluorescent Display Tube

RELAY

Ref. No.		Part No.	Part Name & Description
RLY1	⚠	SSY19−1	Relay, Speaker Output

RESISTORS

Ref. No.		Part No.	Part Name & Description			
R1		**ERO50CKF1823**	Metal Film,	182kΩ,	1/2W,	± 1%
R2		RRD18XK563	Chip,	56kΩ,	1/8W,	±10%
R3		**ERD25TJ104**	Carbon,	100kΩ,	1/4W,	± 5%
R4		RRD18XK104	Chip,	100kΩ,	1/8W,	±10%
R5		**ERD25TJ563**	Carbon,	56kΩ,	1/4W,	± 5%
R6		RRD18XK333	Chip,	33kΩ,	1/8W,	±10%
R7		RRD18XK100	Chip,	10Ω,	1/8W,	±10%
R8		RRD18XK221	Chip,	220Ω,	1/8W,	±10%
R9, 10		RRD18XK223	Chip,	22kΩ,	1/8W,	±10%
R11		RRD18XK333	Chip,	33kΩ,	1/8W,	±10%
R12		RRD18XK822	Chip,	8.2kΩ,	1/8W,	±10%
R13		RRD18XK152	Chip,	1.5kΩ,	1/8W,	±10%
R15, 16		RRD18XK221	Chip,	220Ω,	1/8W,	±10%
R17		RRD18XK332	Chip,	3.3kΩ,	1/8W,	±10%
R18		RRD18XK102	Chip,	1kΩ,	1/8W,	±10%
R19		RRD18XK221	Chip,	220Ω,	1/8W,	±10%
R20		RRD18XK332	Chip,	3.3kΩ,	1/8W,	±10%
R21		RRD18XK104	Chip,	100kΩ,	1/8W,	±10%
R22		RRD18XK472	Chip,	4.7kΩ,	1/8W,	±10%
R23		RRD18XK221	Chip,	220Ω,	1/8W,	±10%
R24		RRD18XK182	Chip,	1.8kΩ,	1/8W,	±10%
R25		RRD18XK103	Chip,	10kΩ,	1/8W,	±10%
R26		RRD18XK333	Chip,	33kΩ,	1/8W,	±10%
R27		RRD18XK100	Chip,	10Ω,	1/8W,	±10%
R101		RRD18XK821	Chip,	820Ω,	1/8W,	±10%
R103		RRD18XK100	Chip,	10Ω,	1/8W,	±10%
R104		RRD18XK151	Chip,	150Ω,	1/8W,	±10%
R107		RRD18XK100	Chip,	10Ω,	1/8W,	±10%
R110		RRD18XK102	Chip,	1kΩ,	1/8W,	±10%
R111		RRD18XK152	Chip,	1.5kΩ,	1/8W,	±10%
R112		RRD18XK331	Chip,	330Ω,	1/8W,	±10%
R113		RRD18XK152	Chip,	1.5kΩ,	1/8W,	±10%
R114		RRD18XK151	Chip,	150Ω,	1/8W,	±10%
R127		RRD18XK331	Chip,	330Ω,	1/8W,	±10%
R128		RRD18XK824	Chip,	820kΩ,	1/8W,	±10%
R129, 130		RRD18XK104	Chip,	100kΩ,	1/8W,	±10%
R131		RRD18XK183	Chip,	18kΩ,	1/8W,	±10%
R132		RRD18XK221	Chip,	220Ω,	1/8W,	±10%
R133		RRD18XK104	Chip,	100kΩ,	1/8W,	±10%
R135		RRD18XK333	Chip,	33kΩ,	1/8W,	±10%
R137, 138		RRD18XK103	Chip,	10kΩ,	1/8W,	±10%
R139		RRD18XK472	Chip,	4.7kΩ,	1/8W,	±10%
R140		RRD18XK470	Chip,	47Ω,	1/8W,	±10%
R141		**ERD25FJ472**	Carbon,	4.7kΩ,	1/4W,	± 5%
R142		RRD18XK222	Chip,	2.2kΩ,	1/8W,	±10%
R143		RRD18XK333	Chip,	33kΩ,	1/8W,	±10%
R144		RRD18XK221	Chip,	220Ω,	1/8W,	±10%
R145		**ERO25CKF1822**	Metal Film,	18.2kΩ,	1/4W,	±
R146		RRD18XK473	Chip,	47kΩ,	1/8W,	±1
R147		RRD18XK332	Chip,	3.3kΩ,	1/8W,	±1
R148		RRD18XK333	Chip,	33kΩ,	1/8W,	±1
R149		RRD18XK824	Chip,	820kΩ,	1/8W,	±1
R150		RRD18XK102	Chip,	1kΩ,	1/8W,	±1
R151		RRD18XK153	Chip,	15kΩ,	1/8W,	±1
R152		RRD18XK100	Chip,	10Ω,	1/8W,	±1
R153		RRD18XK104	Chip,	100kΩ,	1/8W,	±1
R154		RRD18XK103	Chip,	10kΩ,	1/8W,	±1
R155		RRD18XK562	Chip,	5.6kΩ,	1/8W,	±1
R156 [MC] only		RRD18XK100	Chip,	10Ω,	1/8W,	±1
R157		RRD18XK332	Chip,	3.3kΩ,	1/8W,	±1
R158		RRD18XK473	Chip,	47kΩ,	1/8W,	±1
R159		RRD18XK103	Chip,	10kΩ,	1/8W,	±1
R160		RRD18XK222	Chip,	2.2kΩ,	1/8W,	±1
R161		RRD18XK334	Chip,	330kΩ,	1/8W,	±1
R162		RRD18XK100	Chip,	10Ω,	1/8W,	±1
R163		**ERD25FJ332**	Carbon,	3.3kΩ,	1/4W,	±
R201		RRD18XK151	Chip,	150Ω,	1/8W,	±1
R202		RRD18XK104	Chip,	100kΩ,	1/8W,	±1
R203		RRD18XK222	Chip,	2.2kΩ,	1/8W,	±1
R204		RRD18XK561	Chip,	560Ω,	1/8W,	±1
R205		RRD18XK333	Chip,	33kΩ,	1/8W,	±1
R206		RRD18XK822	Chip,	8.2kΩ,	1/8W,	±1
R207		RRD18XK562	Chip,	5.6kΩ,	1/8W,	±
R208		RRD18XK222	Chip,	2.2kΩ,	1/8W,	±
R209		RRD18XK392	Chip,	3.9kΩ,	1/8W,	±
R210		RRD18XK332	Chip,	3.3kΩ,	1/8W,	±
R211		RRD18XK102	Chip,	1kΩ,	1/8W,	±
R212, 213		RRD18XK333	Chip,	33kΩ,	1/8W,	±
R214		RRD18XK332	Chip,	3.3kΩ,	1/8W,	±
R215		RRD18XK394	Chip,	390kΩ,	1/8W,	±
R216		RRD18XK471	Chip,	470Ω,	1/8W,	±
R217		RRD18XK472	Chip,	4.7kΩ,	1/8W,	±
R218		RRD18XK103	Chip,	10kΩ,	1/8W,	±
R219		RRD18XK124	Chip,	120kΩ,	1/8W,	±
R220		RRD18XK333	Chip,	33kΩ,	1/8W,	±
R221		RRD18XK472	Chip,	4.7kΩ,	1/8W,	±
R222		RRD18XK222	Chip,	2.2kΩ,	1/8W,	±
R223		**ERO25CKF4642**	Metal Film,	46.4kΩ,	1/4W,	±
R224		RRD18XK104	Chip,	100kΩ,	1/8W,	±
R225		RRD18XK103	Chip,	10kΩ,	1/8W,	±
R226		RRD18XK104	Chip,	100kΩ,	1/8W,	±
R227		RRD18XK100	Chip,	10Ω,	1/8W,	±
R228		RRD18XK221	Chip,	220Ω,	1/8W,	±
R301		RRD18XK220	Chip,	22Ω,	1/8W,	±
R302		**ERO25CKF2672**	Metal Film,	26.7kΩ,	1/4W,	±
R303, 304		RRD18XK223	Chip,	22kΩ,	1/8W,	±
R305, 306		RRD18XK473	Chip,	47kΩ,	1/8W,	±
R307, 308		RRD18XK103	Chip,	10kΩ,	1/8W,	±
R309, 310		RRD18XK392	Chip,	3.9kΩ,	1/8W,	±
R311		RRD18XK223	Chip,	22kΩ,	1/8W,	±
R312		RRD18XK333	Chip,	33kΩ,	1/8W,	±
R313		RRD18XK103	Chip,	10kΩ,	1/8W,	±
R314		RRD18XK153	Chip,	15kΩ,	1/8W,	±
R315		RRD18XK102	Chip,	1kΩ,	1/8W,	±
R316		RRD18XK104	Chip,	100kΩ,	1/8W,	±
R317		RRD18XK222	Chip,	2.2kΩ,	1/8W,	±
R318		RRD18XK104	Chip,	100kΩ,	1/8W,	±
R319, 320		RRD18XK472	Chip,	4.7kΩ,	1/8W,	±
R401, 402		**ERO25CKF1003**	Metal Film,	100kΩ,	1/4W,	±
R403, 404		**ERD25FJ221**	Carbon	220Ω,	1/4W,	±
R405, 406		**ERO25CKF8252**	Metal Film,	82.5kΩ,	1/4W,	±
R407, 408		**ERO25CKF1400**	Metal Film,	140Ω,	1/4W,	±
R409, 410		**ERD25FJ332**	Carbon,	3.3kΩ,	1/4W,	±
R411, 412		**ERO25CKF1003**	Metal Film,	100kΩ,	1/4W,	±
R413, 414		**ERO25CKF6801**	Metal Film,	6.8kΩ,	1/4W,	±

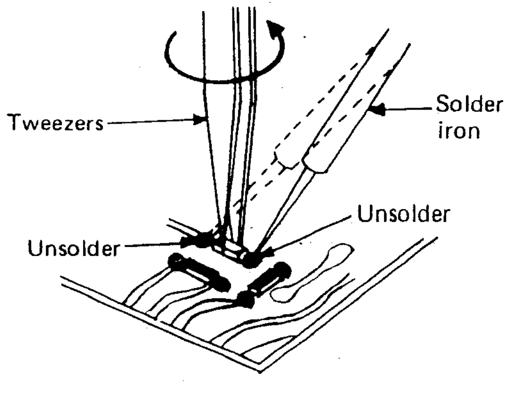


Fig. 1

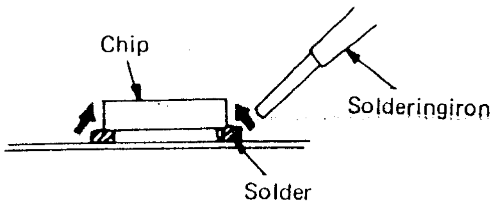


Fig. 2

• Note for replacing chips

1. Do not heat chips more than three (3) seconds.
2. Be careful not to damage the electrode of chips.
3. Use soldering iron (less than 60W) and tweezers for replacing chips.

• Precautions for repair

When frequency is not indicated, FL (display tube), FL driver, digit circuit, and micro-computer must be checked by oscilloscope.
In this case, take care not to allow shortcircuit between IC terminals or application of voltage from measuring instrument to IC terminals.

Ref. No.		Part No.	Part Name & Description
S3		ESA26521	Switch, Recording Mode
S4, 5		SSL149	Switch, FM·AM Muting/Loudness
S6, 8		SSL159	Switch, High & Low Boost/Cut
S7		SSL151	Switch, Mid Range Boost/Cut
S9		SSR145–1	Switch, Speaker
S10	⚠	SSL133	Switch, Power Source
S101, 914		ESD14116	Switch, FM Antenna/Allocation
S706, 707		SSH283	Switch, Power Display/Range
S901 ~ 913		SSG1	Switch, Memory/Preset/FM·AM/Manual
FLUORESCENT DISPLAY TUBE			
FL		SAD7MT09ZA	Fluorescent Display Tube
RELAY			
RLY1	⚠	SSY19–1	Relay, Speaker Output
RESISTORS			
R1		**ERO50CKF1823**	Metal Film, 182kΩ, 1/2W, ± 1%
R2		RRD18XK563	Chip, 56kΩ, 1/8W, ±10%
R3		**ERD25TJ104**	Carbon, 100kΩ, 1/4W, ± 5%
R4		RRD18XK104	Chip, 100kΩ, 1/8W, ±10%
R5		**ERD25TJ563**	Carbon, 56kΩ, 1/4W, ± 5%
R6		RRD18XK333	Chip, 33kΩ, 1/8W, ±10%
R7		RRD18XK100	Chip, 10Ω, 1/8W, ±10%
R8		RRD18XK221	Chip, 220Ω, 1/8W, ±10%
R9, 10		RRD18XK223	Chip, 22kΩ, 1/8W, ±10%
R11		RRD18XK333	Chip, 33kΩ, 1/8W, ±10%
R12		RRD18XK822	Chip, 8.2kΩ, 1/8W, ±10%
R13		RRD18XK152	Chip, 1.5kΩ, 1/8W, ±10%
R15, 16		RRD18XK221	Chip, 220Ω, 1/8W, ±10%
R17		RRD18XK332	Chip, 3.3kΩ, 1/8W, ±10%
R18		RRD18XK102	Chip, 1kΩ, 1/8W, ±10%
R19		RRD18XK221	Chip, 220Ω, 1/8W, ±10%
R20		RRD18XK332	Chip, 3.3kΩ, 1/8W, ±10%
R21		RRD18XK104	Chip, 100kΩ, 1/8W, ±10%
R22		RRD18XK472	Chip, 4.7kΩ, 1/8W, ±10%
R23		RRD18XK221	Chip, 220Ω, 1/8W, ±10%
R24		RRD18XK182	Chip, 1.8kΩ, 1/8W, ±10%
R25		RRD18XK103	Chip, 10kΩ, 1/8W, ±10%
R26		RRD18XK333	Chip, 33kΩ, 1/8W, ±10%
R27		RRD18XK100	Chip, 10Ω, 1/8W, ±10%
R101		RRD18XK821	Chip, 820Ω, 1/8W, ±10%
R103		RRD18XK100	Chip, 10Ω, 1/8W, ±10%
R104		RRD18XK151	Chip, 150Ω, 1/8W, ±10%
R107		RRD18XK100	Chip, 10Ω, 1/8W, ±10%
R110		RRD18XK102	Chip, 1kΩ, 1/8W, ±10%
R111		RRD18XK152	Chip, 1.5kΩ, 1/8W, ±10%
R112		RRD18XK331	Chip, 330Ω, 1/8W, ±10%
R113		RRD18XK152	Chip, 1.5kΩ, 1/8W, ±10%
R114		RRD18XK151	Chip, 150Ω, 1/8W, ±10%
R127		RRD18XK331	Chip, 330Ω, 1/8W, ±10%
R128		RRD18XK824	Chip, 820kΩ, 1/8W, ±10%
R129, 130		RRD18XK104	Chip, 100kΩ, 1/8W, ±10%
R131		RRD18XK183	Chip, 18kΩ, 1/8W, ±10%
R132		RRD18XK221	Chip, 220Ω, 1/8W, ±10%
R133		RRD18XK104	Chip, 100kΩ, 1/8W, ±10%
R135		RRD18XK333	Chip, 33kΩ, 1/8W, ±10%
R137, 138		RRD18XK103	Chip, 10kΩ, 1/8W, ±10%
R139		RRD18XK472	Chip, 4.7kΩ, 1/8W, ±10%
R140		RRD18XK470	Chip, 47Ω, 1/8W, ±10%
R141		**ERD25FJ472**	Carbon, 4.7kΩ, 1/4W, ± 5%
R142		RRD18XK222	Chip, 2.2kΩ, 1/8W, ±10%
R143		RRD18XK333	Chip, 33kΩ, 1/8W, ±10%
R144		RRD18XK221	Chip, 220Ω, 1/8W, ±10%
R145		**ERO25CKF1822**	Metal Film, 18.2kΩ, 1/4W, ± 1%
R146		RRD18XK473	Chip, 47kΩ, 1/8W, ±10%
R147		RRD18XK332	Chip, 3.3kΩ, 1/8W, ±10%
R148		RRD18XK333	Chip, 33kΩ, 1/8W, ±10%
R149		RRD18XK824	Chip, 820kΩ, 1/8W, ±10%
R150		RRD18XK102	Chip, 1kΩ, 1/8W, ±10%
R151		RRD18XK153	Chip, 15kΩ, 1/8W, ±10%
R152		RRD18XK100	Chip, 10Ω, 1/8W, ±10%
R153		RRD18XK104	Chip, 100kΩ, 1/8W, ±10%
R154		RRD18XK103	Chip, 10kΩ, 1/8W, ±10%
R155		RRD18XK562	Chip, 5.6kΩ, 1/8W, ±10%
R156 (MC) only		RRD18XK100	Chip, 10Ω, 1/8W, ±10%
R157		RRD18XK332	Chip, 3.3kΩ, 1/8W, ±10%
R158		RRD18XK473	Chip, 47kΩ, 1/8W, ±10%
R159		RRD18XK103	Chip, 10kΩ, 1/8W, ±10%
R160		RRD18XK222	Chip, 2.2kΩ, 1/8W, ±10%
R161		RRD18XK334	Chip, 330kΩ, 1/8W, ±10%
R162		RRD18XK100	Chip, 10Ω, 1/8W, ±10%
R163		**ERD25FJ332**	Carbon, 3.3kΩ, 1/4W, ± 5%
R201		RRD18XK151	Chip, 150Ω, 1/8W, ±10%
R202		RRD18XK104	Chip, 100kΩ, 1/8W, ±10%
R203		RRD18XK222	Chip, 2.2kΩ, 1/8W, ±10%
R204		RRD18XK561	Chip, 560Ω, 1/8W, ±10%
R205		RRD18XK333	Chip, 33kΩ, 1/8W, ±10%
R206		RRD18XK822	Chip, 8.2kΩ, 1/8W, ±10%
R207		RRD18XK562	Chip, 5.6kΩ, 1/8W, ±10%
R208		RRD18XK222	Chip, 2.2kΩ, 1/8W, ±10%
R209		RRD18XK392	Chip, 3.9kΩ, 1/8W, ±10%
R210		RRD18XK332	Chip, 3.3kΩ, 1/8W, ±10%
R211		RRD18XK102	Chip, 1kΩ, 1/8W, ±10%
R212, 213		RRD18XK333	Chip, 33kΩ, 1/8W, ±10%
R214		RRD18XK332	Chip, 3.3kΩ, 1/8W, ±10%
R215		RRD18XK394	Chip, 390kΩ, 1/8W, ±10%
R216		RRD18XK471	Chip, 470Ω, 1/8W, ±10%
R217		RRD18XK472	Chip, 4.7kΩ, 1/8W, ±10%
R218		RRD18XK103	Chip, 10kΩ, 1/8W, ±10%
R219		RRD18XK124	Chip, 120kΩ, 1/8W, ±10%
R220		RRD18XK333	Chip, 33kΩ, 1/8W, ±10%
R221		RRD18XK472	Chip, 4.7kΩ, 1/8W, ±10%
R222		RRD18XK222	Chip, 2.2kΩ, 1/8W, ±10%
R223		**ERO25CKF4642**	Metal Film, 46.4kΩ, 1/4W, ± 1%
R224		RRD18XK104	Chip, 100kΩ, 1/8W, ±10%
R225		RRD18XK103	Chip, 10kΩ, 1/8W, ±10%
R226		RRD18XK104	Chip, 100kΩ, 1/8W, ±10%
R227		RRD18XK100	Chip, 10Ω, 1/8W, ±10%
R228		RRD18XK221	Chip, 220Ω, 1/8W, ±10%
R301		RRD18XK220	Chip, 22Ω, 1/8W, ±10%
R302		**ERO25CKF2672**	Metal Film, 26.7kΩ, 1/4W, ± 1%
R303, 304		RRD18XK223	Chip, 22kΩ, 1/8W, ±10%
R305, 306		RRD18XK473	Chip, 47kΩ, 1/8W, ±10%
R307, 308		RRD18XK103	Chip, 10kΩ, 1/8W, ±10%
R309, 310		RRD18XK392	Chip, 3.9kΩ, 1/8W, ±10%
R311		RRD18XK223	Chip, 22kΩ, 1/8W, ±10%
R312		RRD18XK333	Chip, 33kΩ, 1/8W, ±10%
R313		RRD18XK103	Chip, 10kΩ, 1/8W, ±10%
R314		RRD18XK153	Chip, 15kΩ, 1/8W, ±10%
R315		RRD18XK102	Chip, 1kΩ, 1/8W, ±10%
R316		RRD18XK104	Chip, 100kΩ, 1/8W, ±10%
R317		RRD18XK222	Chip, 2.2kΩ, 1/8W, ±10%
R318		RRD18XK104	Chip, 100kΩ, 1/8W, ±10%
R319, 320		RRD18XK472	Chip, 4.7kΩ, 1/8W, ±10%
R401, 402		**ERO25CKF1003**	Metal Film, 100kΩ, 1/4W, ± 1%
R403, 404		**ERD25FJ221**	Carbon 220Ω, 1/4W, ± 5%
R405, 406		**ERO25CKF8252**	Metal Film, 82.5kΩ, 1/4W, ± 1%
R407, 408		**ERO25CKF1400**	Metal Film, 140Ω, 1/4W, ± 1%
R409, 410		**ERD25FJ332**	Carbon, 3.3kΩ, 1/4W, ± 5%
R411, 412		**ERO25CKF1003**	Metal Film, 100kΩ, 1/4W, ± 1%
R413, 414		**ERO25CKF6801**	Metal Film, 6.8kΩ, 1/4W, ± 1%
R415, 416		**ERD25FJ221**	Carbon, 220Ω, 1/4W,
R417, 418		**ERD25FJ222**	Carbon, 2.2kΩ, 1/4W,
R419, 420		**ERD25TJ563**	Carbon, 56kΩ, 1/4W,
R421, 422		**ERD25TJ104**	Carbon, 100kΩ, 1/4W,
R423, 424		**ERD25TJ824**	Carbon, 820kΩ, 1/4W,
R425, 426		**ERD25TJ824**	Carbon, 820kΩ, 1/4W,
R427, 428		**ERD25TJ824**	Carbon, 820kΩ, 1/4W,
R429, 430		**ERD25FJ331**	Carbon, 330Ω, 1/4W,
R431, 432		**ERD25FJ331**	Carbon, 330Ω, 1/4W,
R433, 434		**ERD25FJ222**	Carbon, 2.2kΩ, 1/4W,
R435		**ERD25FJ102**	Carbon, 1kΩ, 1/4W,
R501, 502		**ERD25TJ123**	Carbon, 12kΩ, 1/4W,
R503, 504		**ERD25TJ104**	Carbon, 100kΩ, 1/4W,
R505, 506		**ERD25TJ474**	Carbon, 470kΩ, 1/4W,
R507, 508		**ERD25FJ102**	Carbon, 1kΩ, 1/4W,
R509, 510		**ERD25FJ122**	Carbon, 1.2kΩ, 1/4W,
R511, 512		**ERD25TJ274**	Carbon, 270kΩ, 1/4W,
R513, 514		**ERD25TJ154**	Carbon, 150kΩ, 1/4W,
R515, 516		**ERD25TJ104**	Carbon, 100kΩ, 1/4W,
R517, 518		**ERD25FJ332**	Carbon, 3.3kΩ, 1/4W,
R519, 520		**ERD25TJ333**	Carbon, 33kΩ, 1/4W,
R521, 522		**ERD25TJ223**	Carbon, 22kΩ, 1/4W,
R523, 524		**ERD25FJ392**	Carbon, 3.9kΩ, 1/4W,
R525, 526		**ERD25FJ122**	Carbon, 1.2kΩ, 1/4W,
R527, 528		**ERD25FJ821**	Carbon, 820Ω, 1/4W,
R529, 530		**ERD25FJ272**	Carbon, 2.7kΩ, 1/4W,
R531, 532		**ERD25FJ272**	Carbon, 2.7kΩ, 1/4W,
R533, 534		**ERD25FJ122**	Carbon, 1.2kΩ, 1/4W,
R535, 536		**ERD25TJ394**	Carbon, 390kΩ, 1/4W,
R537, 538		**ERD25FJ102**	Carbon, 1kΩ, 1/4W,
R539, 540		**ERD25TJ334**	Carbon, 330kΩ, 1/4W,
R601, 602		**ERD25FJ102**	Carbon, 1kΩ, 1/4W,
R603, 604		**ERD25TJ183**	Carbon, 18kΩ, 1/4W,
R605, 606		**ERD25FJ392**	Carbon, 3.9kΩ, 1/4W,
R607, 608		**ERD25TJ183**	Carbon, 18kΩ, 1/4W,
R609, 610		**ERO25CKF5623**	Metal Film, 562kΩ, 1/4W,
R613, 614	⚠	**ERD25FJ271**	Carbon, 270Ω, 1/4W,
R615, 616	⚠	**ERD25FJ470**	Carbon, 47Ω, 1/4W,
R617, 618	⚠	**ERD25FJ560**	Carbon, 56Ω, 1/4W,
R619, 620		**ERD25FJ392**	Carbon, 3.9kΩ, 1/4W,
R621, 622		**ERD25FJ562**	Carbon, 5.6kΩ, 1/4W,
R623, 624		**ERD25FJ101**	Carbon, 100Ω, 1/4W,
R625, 626	⚠	**ERD25FJ820**	Carbon, 82Ω, 1/4W,
R627, 628		**ERD25FJ561**	Carbon, 560Ω, 1/4W,
R629, 630		**ERD25TJ473**	Carbon, 47kΩ, 1/4W,
R631, 632		**ERD25TJ274**	Carbon, 270kΩ, 1/4W,
R637, 638	⚠	**ERD25FJ390**	Carbon, 39Ω, 1/4W,
R643, 644	⚠	**ERD25FJ182**	Carbon, 1.8kΩ, 1/4W,
R645, 646	⚠	**ERD25FJ182**	Carbon, 1.8kΩ, 1/4W,
R647, 648	⚠	**ERD25FJ152**	Carbon, 1.5kΩ, 1/4W,
R649, 650	⚠	**ERD25FJ122**	Carbon, 1.2kΩ, 1/4W,
R651, 652	⚠	**ERD25FJ152**	Carbon, 1.5kΩ, 1/4W,
R653, 654	⚠	**ERD25FJ471**	Carbon, 470Ω, 1/4W,
R655, 656	⚠	**ERD25FJ471**	Carbon, 470Ω, 1/4W,
R657, 658		**ERG1ANJ822**	Metal Oxide, 8.2kΩ, 1W,
R659, 660	⚠	**ERD25FJ821**	Carbon, 820Ω, 1/4W,
R661, 662	⚠	**ERD25FJ152**	Carbon, 1.5kΩ, 1/4W,
R663, 664	⚠	**ERD25FJ821**	Carbon, 820Ω, 1/4W,
R665, 666		**ERG1ANJ822**	Metal Oxide, 8.2kΩ, 1W,
R667, 668	⚠	**ERD25FJ102**	Carbon, 1kΩ, 1/4W,
R669, 670	⚠	**ERD25FJ221**	Carbon, 220Ω, 1/4W,
R671, 672	⚠	ERD25FAJ2R2	Carbon, 2.2Ω, 1/4W,
R673, 674	⚠	ERD25FAJ2R2	Carbon, 2.2Ω, 1/4W,
R679, 680	⚠	ERF5RKR47	Non Flammable, 0.47Ω, 5W,
R681, 682	⚠	ERF5RKR47	Non Flammable, 0.47Ω, 5W,
R683, 684		**ERG2ANJ331**	Metal Oxide, 330Ω, 2W,
R685, 686		**ERG2ANJ120**	Metal Oxide, 12Ω, 2W,

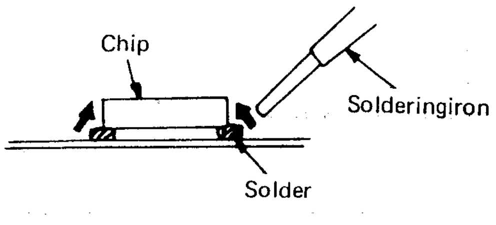


Fig. 2

• Note for replacing chips

1. Do not heat chips more than three (3) seconds.
2. Be careful not to damage the electrode of chips.
3. Use soldering iron (less than 60W) and tweezers for replacing chips.

• Precautions for repair

When frequency is not indicated, FL (display tube), FL driver, digit circuit, and micro-computer must be checked by oscilloscope.
In this case, take care not to allow shortcircuit between IC terminals or application of voltage from measuring instrument to IC terminals.

■ VARIABLE RESISTORS

• Alteration of resistance values according to the rotationa

Alteration characteristics as shown below are often used
the set at optimum levels, and are used according to the
sound volume adjustment; (A) and (C) are for bass and
quality adjustment; and (BH) is for the adjustment of sour
In the case of this unit, variable resistor with characterist
angle of 150° (center) is used for bass adjustment. Also, v
at rotational angle of 150° (center) is used for treble adj
tors are interlocked with characteristics (C) and (A) combi

SA-616 SA-616

Ref. No.		Part No.	Part Name & Description
R145		**ERO25CKF1822**	Metal Film, 18.2kΩ, 1/4W, ± 1%
R146		RRD18XK473	Chip, 47kΩ, 1/8W, ±10%
R147		RRD18XK332	Chip, 3.3kΩ, 1/8W, ±10%
R148		RRD18XK333	Chip, 33kΩ, 1/8W, ±10%
R149		RRD18XK824	Chip, 820kΩ, 1/8W, ±10%
R150		RRD18XK102	Chip, 1kΩ, 1/8W, ±10%
R151		RRD18XK153	Chip, 15kΩ, 1/8W, ±10%
R152		RRD18XK100	Chip, 10Ω, 1/8W, ±10%
R153		RRD18XK104	Chip, 100kΩ, 1/8W, ±10%
R154		RRD18XK103	Chip, 10kΩ, 1/8W, ±10%
R155		RRD18XK562	Chip, 5.6kΩ, 1/8W, ±10%
R156 [MC] only		RRD18XK100	Chip, 10Ω, 1/8W, ±10%
R157		RRD18XK332	Chip, 3.3kΩ, 1/8W, ±10%
R158		RRD18XK473	Chip, 47kΩ, 1/8W, ±10%
R159		RRD18XK103	Chip, 10kΩ, 1/8W, ±10%
R160		RRD18XK222	Chip, 2.2kΩ, 1/8W, ±10%
R161		RRD18XK334	Chip, 330kΩ, 1/8W, ±10%
R162		RRD18XK100	Chip, 10Ω, 1/8W, ±10%
R163		**ERD25FJ332**	Carbon, 3.3kΩ, 1/4W, ± 5%
R201		RRD18XK151	Chip, 150Ω, 1/8W, ±10%
R202		RRD18XK104	Chip, 100kΩ, 1/8W, ±10%
R203		RRD18XK222	Chip, 2.2kΩ, 1/8W, ±10%
R204		RRD18XK561	Chip, 560Ω, 1/8W, ±10%
R205		RRD18XK333	Chip, 33kΩ, 1/8W, ±10%
R206		RRD18XK822	Chip, 8.2kΩ, 1/8W, ±10%
R207		RRD18XK562	Chip, 5.6kΩ, 1/8W, ±10%
R208		RRD18XK222	Chip, 2.2kΩ, 1/8W, ±10%
R209		RRD18XK392	Chip, 3.9kΩ, 1/8W, ±10%
R210		RRD18XK332	Chip, 3.3kΩ, 1/8W, ±10%
R211		RRD18XK102	Chip, 1kΩ, 1/8W, ±10%
R212, 213		RRD18XK333	Chip, 33kΩ, 1/8W, ±10%
R214		RRD18XK332	Chip, 3.3kΩ, 1/8W, ±10%
R215		RRD18XK394	Chip, 390kΩ, 1/8W, ±10%
R216		RRD18XK471	Chip, 470Ω, 1/8W, ±10%
R217		RRD18XK472	Chip, 4.7kΩ, 1/8W, ±10%
R218		RRD18XK103	Chip, 10kΩ, 1/8W, ±10%
R219		RRD18XK124	Chip, 120kΩ, 1/8W, ±10%
R220		RRD18XK333	Chip, 33kΩ, 1/8W, ±10%
R221		RRD18XK472	Chip, 4.7kΩ, 1/8W, ±10%
R222		RRD18XK222	Chip, 2.2kΩ, 1/8W, ±10%
R223		**ERO25CKF4642**	Metal Film, 46.4kΩ, 1/4W, ± 1%
R224		RRD18XK104	Chip, 100kΩ, 1/8W, ±10%
R225		RRD18XK103	Chip, 10kΩ, 1/8W, ±10%
R226		RRD18XK104	Chip, 100kΩ, 1/8W, ±10%
R227		RRD18XK100	Chip, 10Ω, 1/8W, ±10%
R228		RRD18XK221	Chip, 220Ω, 1/8W, ±10%
R301		RRD18XK220	Chip, 22Ω, 1/8W, ±10%
R302		**ERO25CKF2672**	Metal Film, 26.7kΩ, 1/4W, ± 1%
R303, 304		RRD18XK223	Chip, 22kΩ, 1/8W, ±10%
R305, 306		RRD18XK473	Chip, 47kΩ, 1/8W, ±10%
R307, 308		RRD18XK103	Chip, 10kΩ, 1/8W, ±10%
R309, 310		RRD18XK392	Chip, 3.9kΩ, 1/8W, ±10%
R311		RRD18XK223	Chip, 22kΩ, 1/8W, ±10%
R312		RRD18XK333	Chip, 33kΩ, 1/8W, ±10%
R313		RRD18XK103	Chip, 10kΩ, 1/8W, ±10%
R314		RRD18XK153	Chip, 15kΩ, 1/8W, ±10%
R315		RRD18XK102	Chip, 1kΩ, 1/8W, ±10%
R316		RRD18XK104	Chip, 100kΩ, 1/8W, ±10%
R317		RRD18XK222	Chip, 2.2kΩ, 1/8W, ±10%
R318		RRD18XK104	Chip, 100kΩ, 1/8W, ±10%
R319, 320		RRD18XK472	Chip, 4.7kΩ, 1/8W, ±10%
R401, 402		**ERO25CKF1003**	Metal Film, 100kΩ, 1/4W, ± 1%
R403, 404		**ERD25FJ221**	Carbon 220Ω, 1/4W, ± 5%
R405, 406		**ERO25CKF8252**	Metal Film, 82.5kΩ, 1/4W, ± 1%
R407, 408		**ERO25CKF1400**	Metal Film, 140Ω, 1/4W, ± 1%
R409, 410		**ERD25FJ332**	Carbon, 3.3kΩ, 1/4W, ± 5%
R411, 412		**ERO25CKF1003**	Metal Film, 100kΩ, 1/4W, ± 1%
R413, 414		**ERO25CKF6801**	Metal Film, 6.8kΩ, 1/4W, ± 1%

Ref. No.		Part No.	Part Name & Description
R415, 416		**ERD25FJ221**	Carbon, 220Ω, 1/4W, ± 5%
R417, 418		**ERD25FJ222**	Carbon, 2.2kΩ, 1/4W, ± 5%
R419, 420		**ERD25TJ563**	Carbon, 56kΩ, 1/4W, ± 5%
R421, 422		**ERD25TJ104**	Carbon, 100kΩ, 1/4W, ± 5%
R423, 424		**ERD25TJ824**	Carbon, 820kΩ, 1/4W, ± 5%
R425, 426		**ERD25TJ824**	Carbon, 820kΩ, 1/4W, ± 5%
R427, 428		**ERD25TJ824**	Carbon, 820kΩ, 1/4W, ± 5%
R429, 430		**ERD25FJ331**	Carbon, 330Ω, 1/4W, ± 5%
R431, 432		**ERD25FJ331**	Carbon, 330Ω, 1/4W, ± 5%
R433, 434		**ERD25FJ222**	Carbon, 2.2kΩ, 1/4W, ± 5%
R435		**ERD25FJ102**	Carbon, 1kΩ, 1/4W, ± 5%
R501, 502		**ERD25TJ123**	Carbon, 12kΩ, 1/4W, ± 5%
R503, 504		**ERD25TJ104**	Carbon, 100kΩ, 1/4W, ± 5%
R505, 506		**ERD25TJ474**	Carbon, 470kΩ, 1/4W, ± 5%
R507, 508		**ERD25FJ102**	Carbon, 1kΩ, 1/4W, ± 5%
R509, 510		**ERD25FJ122**	Carbon, 1.2kΩ, 1/4W, ± 5%
R511, 512		**ERD25TJ274**	Carbon, 270kΩ, 1/4W, ± 5%
R513, 514		**ERD25TJ154**	Carbon, 150kΩ, 1/4W, ± 5%
R515, 516		**ERD25TJ104**	Carbon, 100kΩ, 1/4W, ± 5%
R517, 518		**ERD25FJ332**	Carbon, 3.3kΩ, 1/4W, ± 5%
R519, 520		**ERD25TJ333**	Carbon, 33kΩ, 1/4W, ± 5%
R521, 522		**ERD25TJ223**	Carbon, 22kΩ, 1/4W, ± 5%
R523, 524		**ERD25FJ392**	Carbon, 3.9kΩ, 1/4W, ± 5%
R525, 526		**ERD25FJ122**	Carbon, 1.2kΩ, 1/4W, ± 5%
R527, 528		**ERD25FJ821**	Carbon, 820Ω, 1/4W, ± 5%
R529, 530		**ERD25FJ272**	Carbon, 2.7kΩ, 1/4W, ± 5%
R531, 532		**ERD25FJ272**	Carbon, 2.7kΩ, 1/4W, ± 5%
R533, 534		**ERD25FJ122**	Carbon, 1.2kΩ, 1/4W, ± 5%
R535, 536		**ERD25TJ394**	Carbon, 390kΩ, 1/4W, ± 5%
R537, 538		**ERD25FJ102**	Carbon, 1kΩ, 1/4W, ± 5%
R539, 540		**ERD25TJ334**	Carbon, 330kΩ, 1/4W, ± 5%
R601, 602		**ERD25FJ102**	Carbon, 1kΩ, 1/4W, ± 5%
R603, 604		**ERD25TJ183**	Carbon, 18kΩ, 1/4W, ± 5%
R605, 606		**ERD25FJ392**	Carbon, 3.9kΩ, 1/4W, ± 5%
R607, 608		**ERD25TJ183**	Carbon, 18kΩ, 1/4W, ± 5%
R609, 610		**ERO25CKF5623**	Metal Film, 562kΩ, 1/4W, ± 1%
R613, 614	⚠	**ERD25FJ271**	Carbon, 270Ω, 1/4W, ± 5%
R615, 616	⚠	**ERD25FJ470**	Carbon, 47Ω, 1/4W, ± 5%
R617, 618	⚠	**ERD25FJ560**	Carbon, 56Ω, 1/4W, ± 5%
R619, 620		**ERD25FJ392**	Carbon, 3.9kΩ, 1/4W, ± 5%
R621, 622		**ERD25FJ562**	Carbon, 5.6kΩ, 1/4W, ± 5%
R623, 624		**ERD25FJ101**	Carbon, 100Ω, 1/4W, ± 5%
R625, 626	⚠	**ERD25FJ820**	Carbon, 82Ω, 1/4W, ± 5%
R627, 628		**ERD25FJ561**	Carbon, 560Ω, 1/4W, ± 5%
R629, 630		**ERD25TJ473**	Carbon, 47kΩ, 1/4W, ± 5%
R631, 632		**ERD25TJ274**	Carbon, 270kΩ, 1/4W, ± 5%
R637, 638	⚠	**ERD25FJ390**	Carbon, 39Ω, 1/4W, ± 5%
R643, 644	⚠	**ERD25FJ182**	Carbon, 1.8kΩ, 1/4W, ± 5%
R645, 646	⚠	**ERD25FJ182**	Carbon, 1.8kΩ, 1/4W, ± 5%
R647, 648	⚠	**ERD25FJ152**	Carbon, 1.5kΩ, 1/4W, ± 5%
R649, 650	⚠	**ERD25FJ122**	Carbon, 1.2kΩ, 1/4W, ± 5%
R651, 652	⚠	**ERD25FJ152**	Carbon, 1.5kΩ, 1/4W, ± 5%
R653, 654	⚠	**ERD25FJ471**	Carbon, 470Ω, 1/4W, ± 5%
R655, 656	⚠	**ERD25FJ471**	Carbon, 470Ω, 1/4W, ± 5%
R657, 658		**ERG1ANJ822**	Metal Oxide, 8.2kΩ, 1W, ± 5%
R659, 660	⚠	**ERD25FJ821**	Carbon, 820Ω, 1/4W, ± 5%
R661, 662	⚠	**ERD25FJ152**	Carbon, 1.5kΩ, 1/4W, ± 5%
R663, 664	⚠	**ERD25FJ821**	Carbon, 820Ω, 1/4W, ± 5%
R665, 666		**ERG1ANJ822**	Metal Oxide, 8.2kΩ, 1W, ± 5%
R667, 668	⚠	**ERD25FJ102**	Carbon, 1kΩ, 1/4W, ± 5%
R669, 670	⚠	**ERD25FJ221**	Carbon, 220Ω, 1/4W, ± 5%
R671, 672	⚠	ERD25FAJ2R2	Carbon, 2.2Ω, 1/4W, ± 5%
R673, 674	⚠	ERD25FAJ2R2	Carbon, 2.2Ω, 1/4W, ± 5%
R679, 680	⚠	ERF5RKR47	Non Flammable, 0.47Ω, 5W, ±10%
R681, 682	⚠	ERF5RKR47	Non Flammable, 0.47Ω, 5W, ±10%
R683, 684		**ERG2ANJ331**	Metal Oxide, 330Ω, 2W, ± 5%
R685, 686		**ERG2ANJ120**	Metal Oxide, 12Ω, 2W, ± 5%

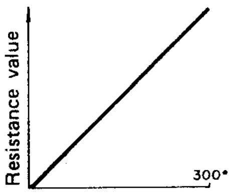
Ref. No.		Part No.	Part Name & Description
R687, 688		**ERG2ANJ120**	Metal Oxide, 12Ω, 2W, ± 5%
R689, 690	⚠	**ERD25FJ680**	Carbon, 68Ω, 1/4W, ± 5%
R691, 692	⚠	**ERD25FJ680**	Carbon, 68Ω, 1/4W, ± 5%
R693, 694		**ERD25TJ823**	Carbon, 82kΩ, 1/4W, ± 5%
R695		**ERD25TJ153**	Carbon, 15kΩ, 1/4W, ± 5%
R696		**ERD25TJ154**	Carbon, 150kΩ, 1/4W, ± 5%
R697		**ERD25TJ333**	Carbon, 33kΩ, 1/4W, ± 5%
R698		**ERD25TJ123**	Carbon, 12kΩ, 1/4W, ± 5%
R699		**ERG1ANJ472**	Metal Oxide, 4.7kΩ, 1W, ± 5%
R701		**ERG1ANJ182**	Metal Oxide, 1.8kΩ, 1/4W, ± 5%
R702	⚠	ERQ1CJ271	Fuse Type Metallic, 270Ω, 1W, ± 5%
R703	⚠	ERQ2CJ221	Fuse Type Metallic, 220Ω, 2W, ± 5%
R704		**ERO25CKF7871**	Metal Film, 7.87kΩ, 1/4W, ± 1%
R705		**ERO25CKF5301**	Metal Film, 5.3kΩ, 1/4W, ± 1%
R706		**ERO25CKF1102**	Metal Film, 11kΩ, 1/4W, ± 1%
R708		**ERO25CKF1002**	Metal Film, 10kΩ, 1/4W, ± 1%
R712	⚠	**ERD25FJ471**	Carbon, 470Ω, 1/4W, ± 5%
R713		**ERD25FJ222**	Carbon, 2.2kΩ, 1/4W, ± 5%
R714	⚠	**ERD50FJ220**	Carbon, 22Ω, 1/2W, ± 5%
R715	⚠	**ERD50FJ471**	Carbon, 470Ω, 1/2W, ± 5%
R716	⚠	ERD25FAJ2R2	Carbon, 2.2Ω, 1/4W, ± 5%
R717	⚠	**ERC12ZGK335**	Solid, 3.3MΩ, 1/2W, ±10%
R720	⚠	**ERD50FJ561**	Carbon, 560Ω, 1/4W, ± 5%
R721		**ERD25FJ151**	Carbon, 150Ω, 1/4W, ± 5%
R750		**ERG2ANJ180**	Metal Oxide, 18Ω, 2W, ± 5%
R751		**ERD25FJ332**	Carbon, 3.3kΩ, 1/4W, ± 5%
R752	⚠	**ERD50FJ272**	Carbon, 2.7kΩ, 1/2W, ± 5%
R753		**ERG1ANJ222**	Metal Oxide, 2.2kΩ, 1W, ± 5%
R901, 902		**ERD25FJ102**	Carbon, 1kΩ, 1/4W, ± 5%
R903		**ERD25FJ103**	Carbon, 10kΩ, 1/4W, ± 5%
R904		**ERD25TJ223**	Carbon, 22kΩ, 1/4W, ± 5%
R905		**ERD25FJ682**	Carbon, 6.8kΩ, 1/4W, ± 5%
R906		**ERD35FJ822**	Carbon, 8.2kΩ, 1/4W, ± 5%
R907		**ERD25TJ393**	Carbon, 39kΩ, 1/4W, ± 5%
R908		**ERD25TJ104**	Carbon, 100kΩ, 1/4W, ± 5%
R909		**ERD25TJ563**	Carbon, 56kΩ, 1/4W, ± 5%
R910		**ERD25TJ104**	Carbon, 100kΩ, 1/4W, ± 5%
R911		**ERD25FJ102**	Carbon, 1kΩ, 1/4W, ± 5%
R912		**ERD25FJ332**	Carbon, 3.3kΩ, 1/4W, ± 5%
R913		**ERD25FJ152**	Carbon, 1.5kΩ, 1/4W, ± 5%
R914		**ERD25FJ682**	Carbon, 6.8kΩ, 1/4W, ± 5%
R915		**ERD25TJ153**	Carbon, 15kΩ, 1/4W, ± 5%
R916		**ERD25TJ333**	Carbon, 33kΩ, 1/4W, ± 5%
R917		**ERD25FJ100**	Carbon, 10Ω, 1/4W, ± 5%
R918		**ERD25FJ331**	Carbon, 330Ω, 1/4W, ± 5%
R919		**ERD25TJ824**	Carbon, 820kΩ, 1/4W, ± 5%
R920		**ERD25TJ473**	Carbon, 47kΩ, 1/4W, ± 5%
R921		**ERD25FJ101**	Carbon, 100Ω, 1/4W, ± 5%
R922		**ERD25TJ473**	Carbon, 47kΩ, 1/4W, ± 5%
R923		**ERD25TJ333**	Carbon, 33kΩ, 1/4W, ± 5%
R924		**ERD25FJ103**	Carbon, 10kΩ, 1/4W, ± 5%
R925		**ERD25TJ473**	Carbon, 47kΩ, 1/4W, ± 5%
R926		**ERD25TJ333**	Carbon, 33kΩ, 1/4W, ± 5%
R927		**ERD25FJ152**	Carbon, 1.5kΩ, 1/4W, ± 5%
R928		**ERD25TJ223**	Carbon, 22kΩ, 1/4W, ± 5%
R929		**ERD25TJ333**	Carbon, 33kΩ, 1/4W, ± 5%
R930, 931		**ERD25TJ104**	Carbon, 100kΩ, 1/4W, ± 5%
R932		**ERD25FJ331**	Carbon, 330Ω, 1/4W, ± 5%
R933		**ERD25FJ471**	Carbon, 470Ω, 1/4W, ± 5%
R934		**ERD25FJ562**	Carbon, 5.6kΩ, 1/4W, ± 5%
R1001		**ERD25TJ224**	Carbon, 220kΩ, 1/4W, ± 5%
R1002		**ERD25TJ223**	Carbon, 22kΩ, 1/4W, ± 5%
R1003		**ERG2ANJ681**	Metal Oxide, 680Ω, 2W, ± 5%
R1004		**ERD25FJ681**	Carbon, 680Ω, 1/4W, ± 5%
R1007, 1008		**ERD25TJ473**	Carbon, 47kΩ, 1/4W, ± 5%
R1009, 1010		**ERD25TJ474**	Carbon, 470kΩ, 1/4W, ± 5%
R1013, 1014		**ERD25TJ274**	Carbon, 270kΩ, 1/4W, ± 5%
R1015, 1016		**ERD25TJ224**	Carbon, 220kΩ, 1/4W, ± 5%

VARIABLE RESISTORS

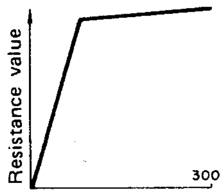
• Alteration of resistance values according to the rotational angles of variable resistors

Alteration characteristics as shown below are often used for sets. All are intended to keep the frequency response of the set at optimum levels, and are used according to the types of circuits. For example, characteristic (B) is used for sound volume adjustment; (A) and (C) are for bass and treble sound quality adjustment; (G) is for medium sound quality adjustment; and (BH) is for the adjustment of sound balance between the right and left.

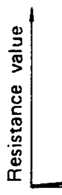
In the case of this unit, variable resistor with characteristic (C) which is short-circuited between its ends at rotational angle of 150° (center) is used for bass adjustment. Also, variable resistor with characteristic (C) whose resistance is zero at rotational angle of 150° (center) is used for treble adjustment. And characteristic (BH) in which two variable resistors are interlocked with characteristics (C) and (A) combined is used for the adjustment of sound level balance.



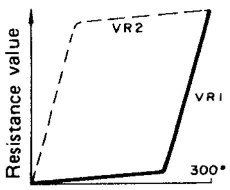
Characteristic (B)



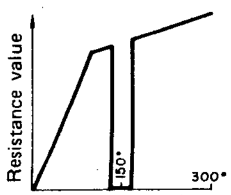
Characteristic (C)



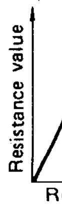
VR1 is inter locked
with VR2



Characteristic (BH)



Characteristic (C):
short-circuited at center



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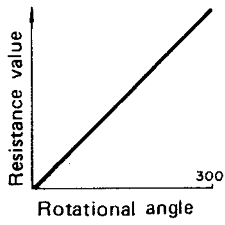
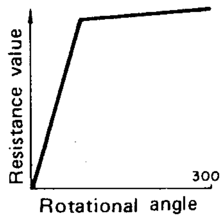
Ref. No.		Part No.	Part Name & Description
687, 688		**ERG2ANJ120**	Metal Oxide, 12Ω, 2W, ± 5%
689, 690	⚠	**ERD25FJ680**	Carbon, 68Ω, 1/4W, ± 5%
691, 692	⚠	**ERD25FJ680**	Carbon, 68Ω, 1/4W, ± 5%
693, 694		**ERD25TJ823**	Carbon, 82kΩ, 1/4W, ± 5%
695		**ERD25TJ153**	Carbon, 15kΩ, 1/4W, ± 5%
696		**ERD25TJ154**	Carbon, 150kΩ, 1/4W, ± 5%
697		**ERD25TJ333**	Carbon, 33kΩ, 1/4W, ± 5%
698		**ERD25TJ123**	Carbon, 12kΩ, 1/4W, ± 5%
699		**ERG1ANJ472**	Metal Oxide, 4.7kΩ, 1W, ± 5%
701		**ERG1ANJ182**	Metal Oxide, 1.8kΩ, 1/4W, ± 5%
702	⚠	ERQ1CJ271	Fuse Type Metallic, 270Ω, 1W, ± 5%
703	⚠	ERQ2CJ221	Fuse Type Metallic, 220Ω, 2W, ± 5%
704		**ERO25CKF7871**	Metal Film, 7.87kΩ, 1/4W, ± 1%
705		**ERO25CKF5301**	Metal Film, 5.3kΩ, 1/4W, ± 1%
706		**ERO25CKF1102**	Metal Film, 11kΩ, 1/4W, ± 1%
708		**ERO25CKF1002**	Metal Film, 10kΩ, 1/4W, ± 1%
712	⚠	**ERD25FJ471**	Carbon, 470Ω, 1/4W, ± 5%
713		**ERD25FJ222**	Carbon, 2.2kΩ, 1/4W, ± 5%
714	⚠	**ERD50FJ220**	Carbon, 22Ω, 1/2W, ± 5%
715	⚠	**ERD50FJ471**	Carbon, 470Ω, 1/2W, ± 5%
716	⚠	ERD25FAJ2R2	Carbon, 2.2Ω, 1/4W, ± 5%
717	⚠	**ERC12ZGK335**	Solid, 3.3MΩ, 1/2W, ±10%
720	⚠	**ERD50FJ561**	Carbon, 560Ω, 1/4W, ± 5%
721		**ERD25FJ151**	Carbon, 150Ω, 1/4W, ± 5%
750		**ERG2ANJ180**	Metal Oxide, 18Ω, 2W, ± 5%
751		**ERD25FJ332**	Carbon, 3.3kΩ, 1/4W, ± 5%
752	⚠	**ERD50FJ272**	Carbon, 2.7kΩ, 1/2W, ± 5%
753		**ERG1ANJ222**	Metal Oxide, 2.2kΩ, 1W, ± 5%
901, 902		**ERD25FJ102**	Carbon, 1kΩ, 1/4W, ± 5%
903		**ERD25FJ103**	Carbon, 10kΩ, 1/4W, ± 5%
904		**ERD25TJ223**	Carbon, 22kΩ, 1/4W, ± 5%
905		**ERD25FJ682**	Carbon, 6.8kΩ, 1/4W, ± 5%
906		**ERD35FJ822**	Carbon, 8.2kΩ, 1/4W, ± 5%
907		**ERD25TJ393**	Carbon, 39kΩ, 1/4W, ± 5%
908		**ERD25TJ104**	Carbon, 100kΩ, 1/4W, ± 5%
909		**ERD25TJ563**	Carbon, 56kΩ, 1/4W, ± 5%
910		**ERD25TJ104**	Carbon, 100kΩ, 1/4W, ± 5%
911		**ERD25FJ102**	Carbon, 1kΩ, 1/4W, ± 5%
912		**ERD25FJ332**	Carbon, 3.3kΩ, 1/4W, ± 5%
913		**ERD25FJ152**	Carbon, 1.5kΩ, 1/4W, ± 5%
914		**ERD25FJ682**	Carbon, 6.8kΩ, 1/4W, ± 5%
915		**ERD25TJ153**	Carbon, 15kΩ, 1/4W, ± 5%
916		**ERD25TJ333**	Carbon, 33kΩ, 1/4W, ± 5%
917		**ERD25FJ100**	Carbon, 10Ω, 1/4W, ± 5%
918		**ERD25FJ331**	Carbon, 330Ω, 1/4W, ± 5%
919		**ERD25TJ824**	Carbon, 820kΩ, 1/4W, ± 5%
920		**ERD25TJ473**	Carbon, 47kΩ, 1/4W, ± 5%
921		**ERD25FJ101**	Carbon, 100Ω, 1/4W, ± 5%
922		**ERD25TJ473**	Carbon, 47kΩ, 1/4W, ± 5%
923		**ERD25TJ333**	Carbon, 33kΩ, 1/4W, ± 5%
924		**ERD25FJ103**	Carbon, 10kΩ, 1/4W, ± 5%
925		**ERD25TJ473**	Carbon, 47kΩ, 1/4W, ± 5%
926		**ERD25TJ333**	Carbon, 33kΩ, 1/4W, ± 5%
927		**ERD25FJ152**	Carbon, 1.5kΩ, 1/4W, ± 5%
928		**ERD25TJ223**	Carbon, 22kΩ, 1/4W, ± 5%
929		**ERD25TJ333**	Carbon, 33kΩ, 1/4W, ± 5%
930, 931		**ERD25TJ104**	Carbon, 100kΩ, 1/4W, ± 5%
932		**ERD25FJ331**	Carbon, 330Ω, 1/4W, ± 5%
933		**ERD25FJ471**	Carbon, 470Ω, 1/4W, ± 5%
934		**ERD25FJ562**	Carbon, 5.6kΩ, 1/4W, ± 5%
1001		**ERD25TJ224**	Carbon, 220kΩ, 1/4W, ± 5%
1002		**ERD25TJ223**	Carbon, 22kΩ, 1/4W, ± 5%
1003		**ERG2ANJ681**	Metal Oxide, 680Ω, 2W, ± 5%
1004		**ERD25FJ681**	Carbon, 680Ω, 1/4W, ± 5%
1007, 1008		**ERD25TJ473**	Carbon, 47kΩ, 1/4W, ± 5%
1009, 1010		**ERD25TJ474**	Carbon, 470kΩ, 1/4W, ± 5%
1013, 1014		**ERD25TJ274**	Carbon, 270kΩ, 1/4W, ± 5%
1015, 1016		**ERD25TJ224**	Carbon, 220kΩ, 1/4W, ± 5%
R1017, 1018		**ERD25TJ273**	Carbon, 27kΩ, 1/4W, ± 5%
R1019, 1020		**ERD25FJ103**	Carbon, 10kΩ, 1/4W, ± 5%
R1022		**ERD25FJ121**	Carbon, 120Ω, 1/4W, ± 5%
R1023		**ERD25TJ104**	Carbon, 100kΩ, 1/4W, ± 5%
R1024	⚠	**ERD50FJ122**	Carbon, 1.2kΩ, 1/2W, ± 5%
R1025		**ERD25FJ103**	Carbon, 10kΩ, 1/4W, ± 5%
R1026	⚠	**ERD25FJ103**	Carbon, 10kΩ, 1/4W, ± 5%
R1050		**ERD25TJ473**	Carbon, 47kΩ, 1/4W, ± 5%
R1051		**ERD25TJ333**	Carbon, 33kΩ, 1/4W, ± 5%
R1052		**ERD25FJ332**	Carbon, 3.3kΩ, 1/4W, ± 5%
R1053		**ERD25FJ182**	Carbon, 1.8kΩ, 1/4W, ± 5%
CAPACITORS			
C1, 2		ECUX1H102ZF	Chip, 0.001μF, 50V, +80 −20%
C3		ECUX1H390KC	Chip, 39pF, 50V, ± 10%
C4		ECUX1H030DC	Chip, 3pF, 50V, ±0.5pF
C5		ECUX1H102ZF	Chip, 0.001μF, 50V, +80 −20%
C6		ECUX1H040DC	Chip, 4pF, 50V, ±0.5pF
C7, 8		ECUX1H102ZF	Chip, 0.001μF, 50V, +80 −20%
C9		ECUX1H102ZF	Chip, 0.001μF, 50V, +80 −20%
C10		ECUX1H040DC	Chip, 4pF, 50V, ±0.5pF
C11		ECUX1H102ZF	Chip, 0.001μF, 50V, +80 −20%
C12		ECGN5R15K	Ceramic, 0.15μF, 500V, ± 10%
C13, 14		ECUX1H040DC	Chip, 4pF, 50V, ±0.5pF
C15		ECUX1H050DC	Chip, 5pF, 50V, ±0.5pF
C16		ECUX1H010CC	Chip, 1pF, 50V, ±0.25pF
C17		ECUX1H181KD	Chip, 180pF, 50V, ± 10%
C18, 19		ECUX1H103ZF	Chip, 0.01μF, 50V, +80 −20%
C20, 21		ECUX1H102ZF	Chip, 0.001μF, 50V, +80 −20%
C22		ECUX1H102ZF	Chip, 0.001μF, 50V, +80 −20%
C23		ECUX1H070DC	Chip, 7pF, 50V, ±0.5pF
C24		ECUX1H020CC	Chip, 2pF, 50V, ±0.25pF
C25		ECUX1H102ZF	Chip, 0.001μF, 50V, +80 −20%
C26		ECUX1H070DC	Chip, 7pF, 50V, ±0.5pF
C27		ECUX1H220KC	Chip, 22pF, 50V, ± 10%
C28		ECUX1H070DC	Chip, 7pF, 50V, ±0.5pF
C29		ECUX1H102ZF	Chip, 0.001μF, 50V, +80 −20%
C30		ECUX1H040DC	Chip, 4pF, 50V, ±0.5pF
C31		ECUX1H103ZF	Chip, 0.01μF, 50V, +80 −20%
C32		**ECEA1HS100**	Electrolytic, 10μF, 50V
C103, 104		ECUX1H223ZF	Chip, 0.022μF, 50V, +80 −20%
C113		ECKD1H102MDA	Ceramic, 0.001μF, 50V ± 20%
C114, 115		ECUX1H223ZF	Chip, 0.022μF, 50V, +80 −20%
C116		ECUX1H223ZF	Chip, 0.022μF, 50V, +80 −20%
C117		**ECEA50Z1**	Electrolytic, 1μF, 50V
C118		ECUX1H101K	Chip, 100pF, 50V, ± 10%
C119		**ECEA50Z1**	Electrolytic, 1μF, 50V
C120		**ECEA1JS4R7**	Electrolytic, 4.7μF, 6.3V
C121, 122		ECUX1H223ZF	Chip, 0.022μF, 50V, +80 −20%
C123, 124		ECUX1H223ZF	Chip, 0.022μF, 50V, +80 −20%
C125		**ECEA1HS100**	Electrolytic, 10μF, 50V
C126		ECUX1H223ZF	Chip, 0.022μF, 50V, +80 −20%
C127		**ECEA50ZR33**	Electrolytic, 0.33μF, 50V
C128		ECUX1H223ZF	Chip, 0.022μF, 50V, +80 −20%
C129		**ECEA50Z1**	Electrolytic, 1μF, 50V
C130		**ECEA50Z3R3**	Electrolytic, 3.3μF, 50V
C201		ECQM1H473KZ	Polyester, 0.047μF, 50V, ± 10%
C202		ECUX1H100KC	Chip, 10μF, 50V, ± 10%
C203		ECQP1241JZ	Polypropylene, 240pF, 100V, ± 5%
C204		ECUX1H223ZF	Chip, 0.022μF, 50V, +80 −20%
C205		ECUX1H103ZF	Chip, 0.01μF, 50V, +80 −20%
C206		ECUX1H223ZF	Chip, 0.022μF, 50V, +80 −20
C207		ECUX1H390KC	Chip, 39pF, 50V, ± 10%
C208		ECUX1H103MD	Chip, 0.01μF, 50V, ± 20%
C209, 210		ECUX1H223ZF	Chip, 0.022μF, 50V, +80 −20%
C211		ECUX1H223ZF	Chip, 0.022μF, 50V, +80 −20%
C212		**ECEA1JS4R7**	Electrolytic, 4.7μF 63V
C213		ECUX1H103ZF	Chip, 0.01μF, 50V, +80 −20%
C214		ECUX1H470KZ	Chip, 47pF, 50V, ± 10%
C215		ECUX1H103ZF	Chip, 0.01μF, 50V, +80 −20%
C216		ECUX1H223ZF	Chip, 0.022μF, 50V, +80 −20%
C217, 218		ECUX1H103ZF	Chip, 0.01μF, 50V, +80 −20%
C219		ECQM1H473KZ	Polyester, 0.047μF, 50V, ± 10%
C220		**ECEA50Z1**	Electrolytic, 1μF, 50V
C301		**ECEA1CS471**	Electrolytic, 470μF, 16V
C302		ECUX1H680KC	Chip, 68pF, 50V, ± 10%
C303		**ECEA50M4R7R**	Electrolytic, 4.7μF, 50V
C304		ECUX1H101K	Chip, 100pF, 50V, ± 10%
C305, 306		**ECEA1AS470**	Electrolytic, 47μF, 10V
C307, 308		ECUX1H680KC	Chip, 68pF, 50V, ± 10%
C309, 310		**ECEA50Z3R3**	Electrolytic, 3.3μF, 50V
C311		ECUX1H471MD	Chip, 470pF, 50V, ± 20%
C312		ECUX1H102ZF	Chip, 0.001μF, 50V, +80 −20%
C313		ECQP1471JZ	Polypropylene, 470pF, 100V, ± 5%
C314		**ECEA50Z1**	Electrolytic, 1μF, 50V
C315		**ECEA50Z3R3**	Electrolytic, 3.3μF, 50V
C316		ECQM1H473KZ	Polyester, 0.047μF, 50V, ± 10%
C317		**ECEA50ZR22**	Electrolytic, 0.22μF, 50V
C318		ECUX1H223ZF	Chip, 0.022μF, 50V, +80 −20%
C319, 320		**ECEA50Z3R3**	Electrolytic, 3.3μF, 50V
C321		**ECEA50ZR47**	Electrolytic, 0.47μF, 50V
C322, 323		ECQM1H152JZ	Polyester, 0.0015μF, 50V, ± 5%
C329, 330		ECQM1H222JZ	Polyester, 0.0022μF, 50V, ± 5%
C401, 402		**ECEA50M3R3R**	Electrolytic, 3.3μF, 50V
C403, 404		ECKD1H821KB	Ceramic, 820pF, 50V, ± 10%
C405, 406		ECKD1H471KB	Ceramic, 470pF, 50V, ± 10%
C407, 408		ECKD1H222MD	Ceramic 0.0022μF, 50V, ± 20%
C409, 410		ECQP1393GZ	Polypropylene, 0.039μF, 100V, ± 2%
C411, 412		ECQP1103GZ	Polypropylene, 0.01μF, 100V, ± 2%
C413, 414		ECQM1H102JZ	Polyester, 0.001μF, 50V, ± 5%
C415, 416	⚠	ECEA1HNR47S	Non-polar Electrolytic, 0.47μF, 50V
C419, 420		ECQP1681JZ	Polypropylene, 680pF, 100V, ± 5%
C421, 422		**ECEA1AS101**	Electrolytic, 100μF, 10V
C423, 424		ECCD1H121K	Ceramic, 120pF, 50V, ± 10%
C425, 426		**ECEA1ES101**	Electrolytic, 100μF, 25V
C427, 428		ECKD1H331KB	Ceramic, 330pF, 50V, ± 10%
C451, 452		ECKD1H333ZF	Ceramic, 0.033μF, 50V, +80 −20%
C501, 502		ECQM1H333KZ	Polyester, 0.033μF, 50V, ± 10%
C503, 504		**ECEA50MR1R**	Electrolytic, 0.1μF, 50V
C505, 506		ECCD1H101K	Ceramic, 100pF, 50V, ± 10%
C507, 508		**ECEA50ZR1**	Electrolytic, 0.1μF, 50V
C509, 510	⚠	ECEA1CN100S	Non-polar Electrolytic, 10μF, 16V
C511, 512		ECCD1H100K	Ceramic, 10pF, 50V, ± 10%
C513, 514		ECQM1H333KZ	Polyester, 0.033μF, 50V, ± 10%
C515, 516		ECQM1H223KZ	Polyester, 0.022μF, 50V, ± 10%
C517, 518		ECQM1H104KZ	Polyester, 0.1μF, 50V, ± 10%
C519, 520		ECQM1H103KZ	Polyester, 0.01μF, 50V, ± 10%
C521, 522		ECQM1H183KZ	Polyester, 0.018μF, 50V, ± 10%
C523, 524		ECQM1H222KZ	Polyester, 0.0022μF, 50V, ± 10%
C525, 526		ECQM1H223KZ	Polyester, 0.022μF, 50V, ± 10%
C527, 528		**ECEA50ZR33**	Electrolytic, 0.33μF, 50V
C529, 530		ECQM1H124KZ	Polyester, 0.12μF, 50V, ± 10%
C531, 532		ECQM1H562KZ	Polyester, 0.0056μF, 50V, ± 10%
C533, 534	⚠	ECEA1CN100S	Non-polar Electrolytic, 10μF, 16V
C535, 536		**ECEA50Z2R2**	Electrolytic, 2.2μF, 50V
C551,		**ECEA1CS330**	Electrolytic, 33μF, 16V
C571, 572		ECCD1H330K	Ceramic, 33pF, 50V, ± 10%
C601, 602		ECCD1H020C	Ceramic, 2pF, 50V, ±0.25pF
C603, 604		ECQM1H182JZ	Polyester, 0.0018μF, 50V, ± 5%
C605, 606		**ECEA1JS470**	Electrolytic, 47μF, 63V
C607, 608		**ECEA1JS470**	Electrolytic, 47μF, 63V
C611, 612		**ECEA1JS470**	Electrolytic, 47μF, 63V
C615, 616		ECKD1H223ZF	Ceramic, 0.022μF, 50V, +80 −20%
C617, 618		ECKD1H223ZF	Ceramic, 0.022μF, 50V, +80 −20%
C619, 620		**ECEA2AS100**	Electrolytic, 10μF, 100V

le resistors

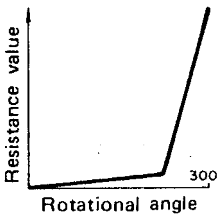
intended to keep the frequency response of
. For example, characteristic (B) is used for
uality adjustment; (G) is for medium sound
en the right and left.
hort-circuited between its ends at rotational
ith characteristic (C) whose resistance is zero
aracteristic (BH) in which two variable resis-
he adjustment of sound level balance.



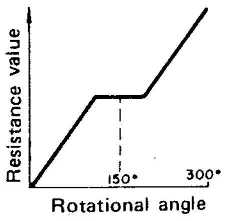
Characteristic (B)



Characteristic (C)

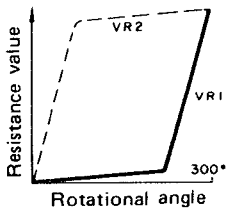


Characteristic (A)

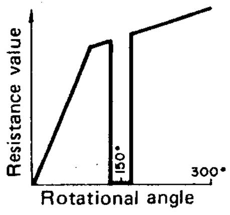


Characteristic (G)

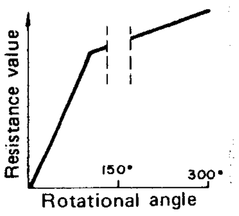
VR1 is inter locked with VR2



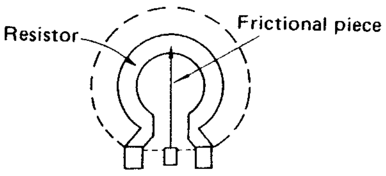
Characteristic (BH)



Characteristic (C): short-circuited at center



Characteristic (C): opened at center



SA-616

	Part No.	Part Name & Description
	ERD25TJ273	Carbon, 27kΩ, 1/4W, ± 5%
	ERD25FJ103	Carbon, 10kΩ, 1/4W, ± 5%
	ERD25FJ121	Carbon, 120Ω, 1/4W, ± 5%
	ERD25TJ104	Carbon, 100kΩ, 1/4W, ± 5%
⚠	**ERD50FJ122**	Carbon, 1.2kΩ, 1/2W, ± 5%
	ERD25FJ103	Carbon, 10kΩ, 1/4W, ± 5%
⚠	**ERD25FJ103**	Carbon, 10kΩ, 1/4W, ± 5%
	ERD25TJ473	Carbon, 47kΩ, 1/4W, ± 5%
	ERD25TJ333	Carbon, 33kΩ, 1/4W, ± 5%
	ERD25FJ332	Carbon, 3.3kΩ, 1/4W, ± 5%
	ERD25FJ182	Carbon, 1.8kΩ, 1/4W, ± 5%
	ECUX1H102ZF	Chip, 0.001μF, 50V, $^{+80}_{-20}$%
	ECUX1H390KC	Chip, 39pF, 50V, ± 10%
	ECUX1H030DC	Chip, 3pF, 50V, ±0.5pF
	ECUX1H102ZF	Chip, 0.001μF, 50V, $^{+80}_{-20}$%
	ECUX1H040DC	Chip, 4pF, 50V, ±0.5pF
	ECUX1H102ZF	Chip, 0.001μF, 50V, $^{+80}_{-20}$%
	ECUX1H102ZF	Chip, 0.001μF, 50V, $^{+80}_{-20}$%
	ECUX1H040DC	Chip, 4pF, 50V, ±0.5pF
	ECUX1H102ZF	Chip, 0.001μF, 50V, $^{+80}_{-20}$%
	ECGN5R15K	Ceramic, 0.15μF, 500V, ± 10%
	ECUX1H040DC	Chip, 4pF, 50V, ±0.5pF
	ECUX1H050DC	Chip, 5pF, 50V, ±0.5pF
	ECUX1H010CC	Chip, 1pF, 50V, ±0.25pF
	ECUX1H181KD	Chip, 180pF, 50V, ± 10%
	ECUX1H103ZF	Chip, 0.01μF, 50V, $^{+80}_{-20}$%
	ECUX1H102ZF	Chip, 0.001μF, 50V, $^{+80}_{-20}$%
	ECUX1H102ZF	Chip, 0.001μF, 50V, $^{+80}_{-20}$%
	ECUX1H070DC	Chip, 7pF, 50V, ±0.5pF
	ECUX1H020CC	Chip, 2pF, 50V, ±0.25pF
	ECUX1H102ZF	Chip, 0.001μF, 50V, $^{+80}_{-20}$%
	ECUX1H070DC	Chip, 7pF, 50V, ±0.5pF
	ECUX1H220KC	Chip, 22pF, 50V, ± 10%
	ECUX1H070DC	Chip, 7pF, 50V, ±0.5pF
	ECUX1H102ZF	Chip, 0.001μF, 50V, $^{+80}_{-20}$%
	ECUX1H040DC	Chip, 4pF, 50V, ±0.5pF
	ECUX1H103ZF	Chip, 0.01μF, 50V, $^{+80}_{-20}$%
	ECEA1HS100	Electrolytic, 10μF, 50V
	ECUX1H223ZF	Chip, 0.022μF, 50V, $^{+80}_{-20}$%
	ECKD1H102MDA	Ceramic, 0.001μF, 50V ± 20%
	ECUX1H223ZF	Chip, 0.022μF, 50V, $^{+80}_{-20}$%
	ECUX1H223ZF	Chip, 0.022μF, 50V, $^{+80}_{-20}$%
	ECEA50Z1	Electrolytic, 1μF, 50V
	ECUX1H101K	Chip, 100pF, 50V, ± 10%
	ECEA50Z1	Electrolytic, 1μF, 50V
	ECEA1JS4R7	Electrolytic, 4.7μF, 6.3V
	ECUX1H223ZF	Chip, 0.022μF, 50V, $^{+80}_{-20}$%
	ECUX1H223ZF	Chip, 0.022μF, 50V, $^{+80}_{-20}$%
	ECEA1HS100	Electrolytic, 10μF, 50V
	ECUX1H223ZF	Chip, 0.022μF, 50V, $^{+80}_{-20}$%
	ECEA50ZR33	Electrolytic, 0.33μF, 50V
	ECUX1H223ZF	Chip, 0.022μF, 50V, $^{+80}_{-20}$%
	ECEA50Z1	Electrolytic, 1μF, 50V
	ECEA50Z3R3	Electrolytic, 3.3μF, 50V
	ECQM1H473KZ	Polyester, 0.047μF, 50V, ± 10%
	ECUX1H100KC	Chip, 10μF, 50V, ± 10%
	ECQP1241JZ	Polypropylene, 240pF, 100V, ± 5%
	ECUX1H223ZF	Chip, 0.022μF, 50V, $^{+80}_{-20}$%
	ECUX1H103ZF	Chip, 0.01μF, 50V, $^{+80}_{-20}$%
	ECUX1H223ZF	Chip, 0.022μF, 50V, $^{+80}_{-20}$%
	ECUX1H390KC	Chip, 39pF, 50V, ± 10%
	ECUX1H103MD	Chip, 0.01μF, 50V, ± 20%
	ECUX1H223ZF	Chip, 0.022μF, 50V, $^{+80}_{-20}$%
	ECUX1H223ZF	Chip, 0.022μF, 50V, $^{+80}_{-20}$%

Ref. No.		Part No.	Part Name & Description
C212		**ECEA1JS4R7**	Electrolytic, 4.7μF 63V
C213		ECUX1H103ZF	Chip, 0.01μF, 50V, $^{+80}_{-20}$%
C214		ECUX1H470KZ	Chip, 47pF, 50V, ± 10%
C215		ECUX1H103ZF	Chip, 0.01μF, 50V, $^{+80}_{-20}$%
C216		ECUX1H223ZF	Chip, 0.022μF, 50V, $^{+80}_{-20}$%
C217, 218		ECUX1H103ZF	Chip, 0.01μF, 50V, $^{+80}_{-20}$%
C219		ECQM1H473KZ	Polyester, 0.047μF, 50V, ± 10%
C220		**ECEA50Z1**	Electrolytic, 1μF, 50V
C301		**ECEA1CS471**	Electrolytic, 470μF, 16V
C302		ECUX1H680KC	Chip, 68pF, 50V, ± 10%
C303		**ECEA50M4R7R**	Electrolytic, 4.7μF, 50V
C304		ECUX1H101K	Chip, 100pF, 50V, ± 10%
C305, 306		**ECEA1AS470**	Electrolytic, 47μF, 10V
C307, 308		ECUX1H680KC	Chip, 68pF, 50V, ± 10%
C309, 310		**ECEA50Z3R3**	Electrolytic, 3.3μF, 50V
C311		ECUX1H471MD	Chip, 470pF, 50V, ± 20%
C312		ECUX1H102ZF	Chip, 0.001μF, 50V, $^{+80}_{-20}$%
C313		ECQP1471JZ	Polypropylene, 470pF, 100V, ± 5%
C314		**ECEA50Z1**	Electrolytic, 1μF, 50V
C315		**ECEA50Z3R3**	Electrolytic, 3.3μF, 50V
C316		ECQM1H473KZ	Polyester, 0.047μF, 50V, ± 10%
C317		**ECEA50ZR22**	Electrolytic, 0.22μF, 50V
C318		ECUX1H223ZF	Chip, 0.022μF, 50V, $^{+80}_{-20}$%
C319, 320		**ECEA50Z3R3**	Electrolytic, 3.3μF, 50V
C321		**ECEA50ZR47**	Electrolytic, 0.47μF, 50V
C322, 323		ECQM1H152JZ	Polyester, 0.0015μF, 50V, ± 5%
C329, 330		ECQM1H222JZ	Polyester, 0.0022μF, 50V, ± 5%
C401, 402		**ECEA50M3R3R**	Electrolytic, 3.3μF, 50V
C403, 404		ECKD1H821KB	Ceramic, 820pF, 50V, ± 10%
C405, 406		ECKD1H471KB	Ceramic, 470pF, 50V, ± 10%
C407, 408		ECKD1H222MD	Ceramic 0.0022μF, 50V, ± 20%
C409, 410		ECQP1393GZ	Polypropylene, 0.039μF, 100V, ± 2%
C411, 412		ECQP1103GZ	Polypropylene, 0.01μF, 100V, ± 2%
C413, 414		ECQM1H102JZ	Polyester, 0.001μF, 50V, ± 5%
C415, 416	⚠	ECEA1HNR47S	Non-polar Electrolytic, 0.47μF, 50V
C419, 420		ECQP1681JZ	Polypropylene, 680pF, 100V, ± 5%
C421, 422		**ECEA1AS101**	Electrolytic, 100μF, 10V
C423, 424		ECCD1H121K	Ceramic, 120pF, 50V, ± 10%
C425, 426		**ECEA1ES101**	Electrolytic, 100μF, 25V
C427, 428		ECKD1H331KB	Ceramic, 330pF, 50V, ± 10%
C451, 452		ECKD1H333ZF	Ceramic, 0.033μF, 50V, $^{+80}_{-20}$%
C501, 502		ECQM1H333KZ	Polyester, 0.033μF, 50V, ± 10%
C503, 504		**ECEA50MR1R**	Electrolytic, 0.1μF, 50V
C505, 506		ECCD1H101K	Ceramic, 100pF, 50V, ± 10%
C507, 508		**ECEA50ZR1**	Electrolytic, 0.1μF, 50V
C509, 510	⚠	ECEA1CN100S	Non-polar Electrolytic, 10μF, 16V
C511, 512		ECCD1H100K	Ceramic, 10pF, 50V, ± 10%
C513, 514		ECQM1H333KZ	Polyester, 0.033μF, 50V, ± 10%
C515, 516		ECQM1H223KZ	Polyester, 0.022μF, 50V, ± 10%
C517, 518		ECQM1H104KZ	Polyester, 0.1μF, 50V, ± 10%
C519, 520		ECQM1H103KZ	Polyester, 0.01μF, 50V, ± 10%
C521, 522		ECQM1H183KZ	Polyester, 0.018μF, 50V, ± 10%
C523, 524		ECQM1H222KZ	Polyester, 0.0022μF, 50V, ± 10%
C525, 526		ECQM1H223KZ	Polyester, 0.022μF, 50V, ± 10%
C527, 528		**ECEA50ZR33**	Electrolytic, 0.33μF, 50V
C529, 530		ECQM1H124KZ	Polyester, 0.12μF, 50V, ± 10%
C531, 532		ECQM1H562KZ	Polyester, 0.0056μF, 50V, ± 10%
C533, 534	⚠	ECEA1CN100S	Non-polar Electrolytic, 10μF, 16V
C535, 536		**ECEA50Z2R2**	Electrolytic, 2.2μF, 50V
C551,		**ECEA1CS330**	Electrolytic, 33μF, 16V
C571, 572		ECCD1H330K	Ceramic, 33pF, 50V, ± 10%
C601, 602		ECCD1H020C	Ceramic, 2pF, 50V, ±0.25pF
C603, 604		ECQM1H182JZ	Polyester, 0.0018μF, 50V, ± 5%
C605, 606		**ECEA1JS470**	Electrolytic, 47μF, 63V
C607, 608		**ECEA1JS470**	Electrolytic, 47μF, 63V
C611, 612		**ECEA1JS470**	Electrolytic, 47μF, 63V
C615, 616		ECKD1H223ZF	Ceramic, 0.022μF, 50V, $^{+80}_{-20}$%
C617, 618		ECKD1H223ZF	Ceramic, 0.022μF, 50V, $^{+80}_{-20}$%
C619, 620		**ECEA2AS100**	Electrolytic, 10μF, 100V

Ref. No.		Part No.	Part Name & Description
C621, 622		ECKD1H681KB	Ceramic, 680pF, 50V, ± 10%
C623, 624		ECKD1H681KB	Ceramic, 680pF, 50V, ± 10%
C625,626 [M] only		ECQM1H473KZ	Polyester, 0.047μF, 125V, ± 10%
C625,626 [MC] only		ECQM1H104KZ	Polyester, 0.1μF, 125V, ± 10%
C627		**ECEA1CS330**	Electrolytic, 33μF, 16V
C628	⚠	ECEA1CN221S	Non-polar Electrolytic, 220μF, 16V,
C629		**ECEA50Z3R3**	Electrolytic, 3.3μF, 50V
C630		ECKD1H102ZF	Ceramic, 0.001μF, 50V, $^{+80}_{-20}$%
C631, 632		**ECEA1HS100**	Electrolytic, 10μF, 50V
C633		**ECEA50Z2R2**	Electrolytic, 2.2μF, 50V
C634		**ECEA50Z2R2**	Electrolytic, 2.2μF, 50V
C635, 636		ECQM1H104KZ	Polyester, 0.1μF, 50V, ± 10%
Use for [MC] only			
C650, 651		**ECEA1HS100**	Electrolytic, 10μF, 50V
C671, 672		ECCD2H030C	Ceramic, 3pF, 500V, ±0.25pF
C701, 702		ECET1JV822Z	Electrolytic, 8200μF, 63V
C703, 704		ECET1JV822Z	Electrolytic, 8200μF, 63V
C705, 706		**ECEA1VS330**	Electrolytic, 33μF, 35V
C707		**ECEA1CS330**	Electrolytic, 33μF, 16V
C708, 709		**ECEA1VS101**	Electrolytic, 100μF, 35V
C712		ECKD1H103ZF	Ceramic, 0.01μF, 50V, $^{+80}_{-20}$%
C713		**ECEA1ES471**	Electrolytic, 470μF, 25V
C714		ECKD1H103ZF	Ceramic, 0.01μF, 50V, $^{+80}_{-20}$%
C715		**ECEA1ES101**	Electrolytic, 100μF, 25V
C717		**ECEA1VS101**	Electrolytic, 100μF, 35V
C718, 719		ECKD1H103ZF	Ceramic, 0.01μF, 50V, $^{+80}_{-20}$%
C720		**ECEA1HS101**	Electrolytic, 100μF, 50V,
C721		ECKD1H103ZF	Ceramic, 0.01μF, 50V, $^{+80}_{-20}$%
C722		**ECEA1VS102**	Electrolytic, 1000μF, 35V
C723		ECKD1H103ZF	Ceramic, 0.01μF, 50V, $^{+80}_{-20}$%
C724		**ECEA1CS102**	Electrolytic, 1000μF, 16V,
C725		**ECEA1ES101**	Electrolytic, 100μF, 25V
C727	⚠	ECKDMY103PF	Ceramic, 0.01μF, 125VAC $^{+100}_{-0}$%
C728		**ECEA1VS102**	Electrolytic, 1000μF, 35V
C729		**ECEA1ES101**	Electrolytic, 100μF, 25V
C730		ECKD1H103ZF	Ceramic, 0.01μF, 50V, $^{+80}_{-20}$%
C901		**ECEA1HS101**	Electrolytic, 100μF, 50V,
C902		ECQM1H103KZ	Polyester, 0.01μF, 50V, ± 10%
C903		**ECEA50M4R7R**	Electrolytic, 4.7μF, 50V,
C904		ECQM1H103KZ	Polyester, 0.01μF, 50V, ± 10%
C905		ECKD1H103ZF	Ceramic, 0.01μF, 50V, $^{+80}_{-20}$%
C906		**ECEA50MR33R**	Electrolytic, 0.33μF, 50V
C907		**ECEA1AS221**	Electrolytic, 220μF, 10V
C909		**ECEA1AS101**	Electrolytic, 100μF, 10V
C911		ECKD1H223ZF	Ceramic, 0.022μF, 50V, $^{+80}_{-20}$%
C912		ECKD1H103ZF	Ceramic, 0.01μF, 50V, $^{+80}_{-20}$%
C913		ECQM1H333KZ	Polyester, 0.033μF, 50V, ± 10%
C915		ECCD1H220K	Ceramic, 22pF, 50V, ± 10%
C916		ECCD1H180KC	Ceramic, 18pF, 50V, ± 10%
C917		ECCD1H080DC	Ceramic, 8pF, 50V, ± 0.5pF
C918		ECKD1H223ZF	Ceramic, 0.022μF, 50V, $^{+80}_{-20}$%
C919		**ECEA0JS102**	Electrolytic, 1000μF, 6.3V
C920		**ECEA1HS470**	Electrolytic, 47μF, 50V
C921		**ECEA0JS102**	Electrolytic, 1000μF, 6.3V
C923, 924		ECKD1H223ZF	Ceramic, 0.022μF, 50V, $^{+80}_{-20}$%
C925		**ECEA1HS100**	Electrolytic, 10μF, 50V
C926		ECKD1H223ZF	Ceramic, 0.022μF, 50V, $^{+80}_{-20}$%

■ SCHEMATIC DIAGRAM Ⓐ (A, B, C and D P.C.B.)...MODEL SA-616

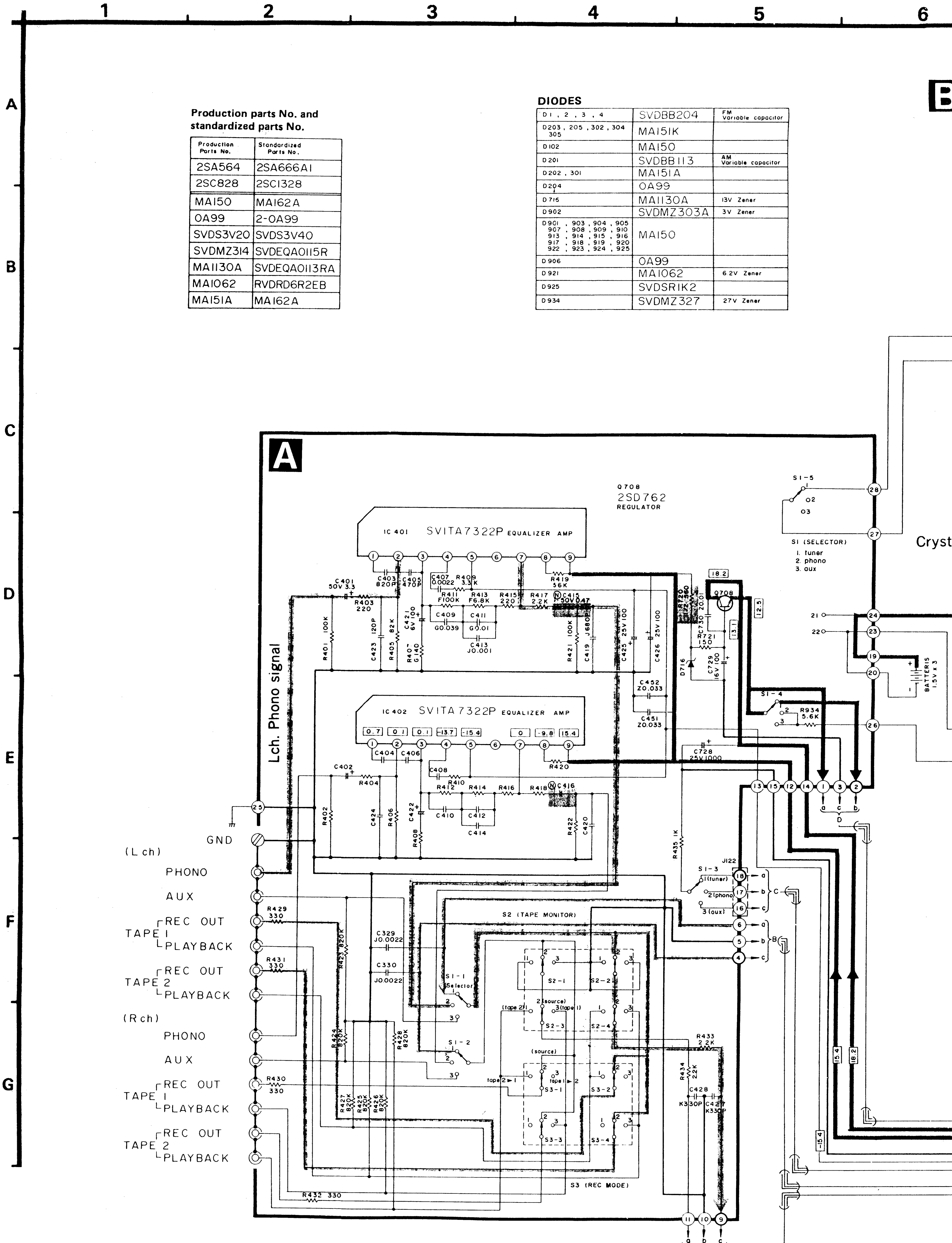
(This schemctic diagram may be modified at any time with the development of new technology.)

Production parts No. and standardized parts No.

Production Parts No.	Standardized Parts No.
2SA564	2SA666A1
2SC828	2SC1328
MA150	MA162A
0A99	2-0A99
SVDS3V20	SVDS3V40
SVDMZ314	SVDEQA0115R
MA1130A	SVDEQA0113RA
MA1062	RVDRD6R2EB
MA151A	MA162A

DIODES

D1, 2, 3, 4	SVDBB204	FM Variable capacitor
D203, 205, 302, 304 305	MA151K	
D102	MA150	
D201	SVDBB113	AM Variable capacitor
D202, 301	MA151A	
D204	0A99	
D716	MA1130A	13V Zener
D902	SVDMZ303A	3V Zener
D901, 903, 904, 905 907, 908, 909, 910 913, 914, 915, 916 917, 918, 919, 920 922, 923, 924, 925	MA150	
D906	0A99	
D921	MA1062	6.2V Zener
D925	SVDSR1K2	
D934	SVDMZ327	27V Zener



1
2
3
4
5
6
A
B
C
D
E
F
G
B
A
Q708
2SD762
REGULATOR
IC401 SVITA7322P EQUALIZER AMP
IC402 SVITA7322P EQUALIZER AMP
C401 50V 3.3
C403 820P
C405 470P
C407 0.0022
R409 3.3K
R403 220
R411 F100K
R413 F6.8K
R415 220
R417 2.2K
C415 50V 0.47
R419 56K
C409 G0.039
C411 G0.01
C413 J0.001
R401 100K
C423 120P
R405 82K
R407 G140
C421 6V 100
R421 100K
C419 J680P
C425 25V 100
C426 25V 100
R720 22K
C730 50V 0.01
R721 150
D716
C729 16V 100
C452 Z0.033
C451 Z0.033
C728 25V 1000
18.2
12.5
13.1
Lch. Phono signal
0.7
0.1
0.1
-13.7
15.4
0
-9.8
15.4
C402
C404
C406
C408
R404
R410
R412
R414
R416
R418
C416
R420
R402
C424
R406
R408
C422
C410
C412
C414
R422
C420
GND
(L ch)
PHONO
AUX
TAPE 1 REC OUT
PLAYBACK
TAPE 2 REC OUT
PLAYBACK
(R ch)
PHONO
AUX
TAPE 1 REC OUT
PLAYBACK
TAPE 2 REC OUT
PLAYBACK
R429 330
R431 330
R430 330
R432 330
R423 820K
R424 820K
R428 820K
R427 820K
R425 820K
R426 820K
C329 J0.0022
C330 J0.0022
S1-1 Selector
S1-2
S2 (TAPE MONITOR)
S2-1
S2-2
S2-3
S2-4
2 (source)
(tape 2)
3 (tape 1)
(source)
tape 2
tape 1
S3-1
S3-2
S3-3
S3-4
S3 (REC MODE)
R435 1K
S1-3
1 (tuner)
2 (phono)
3 (aux)
J122
R433 2.2K
R434 2.2K
C428 K330P
C427 K330P
S1-5
02
03
S1 (SELECTOR)
1. tuner
2. phono
3. aux
S1-4
R934 5.6K
21
22
BATTERIS 1.5V x 3
Cryst
15.4
18.2
-15.4
28
27
24
23
19
20
26
13
15
12
14
1
3
2
25
18
17
16
6
5
4
11
10
9
a
b
c

y.)

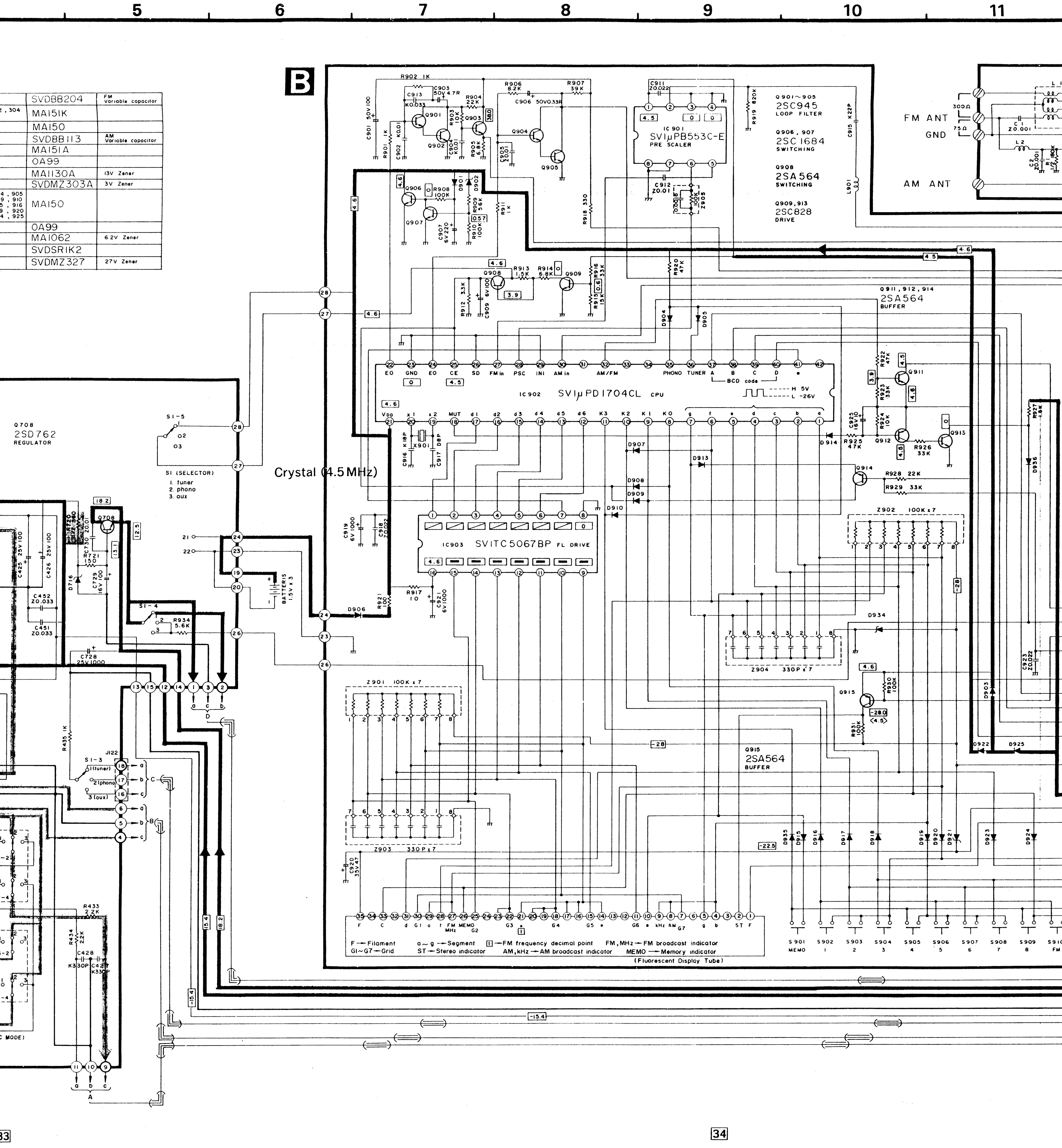
Notes 1:

1. **S1-1 ～ S1-5** : Input selector switch in "**tuner**" position. (① tuner ←→ ② phono ←→ ③ aux)
2. **S2-1 ～ S2-4** : Tape monitor switch in "**source**" position. (① tape 2 ←→ ②source ←→ ③ tape 1)
3. **S3-1 ～ S3-4** : Recording mode switch in "**source**" position. (① tape 2 ▶ 1 ←→ ②source ←→ ③tape 1 ▶ 2)
4. **S101** : FM antenna selector switch in "**normal**" position. (normal ←→ tuned type)
5. **S901** : Memory set switch
6. **S902 ～ S909** : Preset tuning switch.

S902 : 1 ch.	S903 : 2 ch.	S904 : 3 ch.
S905 : 4 ch.	S906 : 5 ch.	S907 : 6 ch.
S908 : 7 ch.	S909 : 8 ch.	

7. **S910** : FM tuner selection switch.
8. **S911** : AM tuner selection switch.
9. **S912** : Manual tuning "**down**" switch.
10. **S913** : Manual tuning "**up**" switch.
11. **S914** : FM/AM allocation selector switch in "**FM 0.2MHz/AM 10kHz**" ste (FM 0.2MHz/AM 10kHz ←→ FM 0.05MHz/AM 9kHz)
12. Indicated voltage values are the standard values for the unit measured by circuit tester (high-impedance) with the chassis taken as standard. Therefor some errors in the voltage values, depending on the internal impedance of the
    - * Figures in ▭ stand for DC voltage in FM/AM signal reception mode.
    - * Figures in 〈 〉 stand for DC voltage in FM stereo signal receptiom mode
    - * Figures in ⌜ ⌟ stand for DC voltage in FM (no signal) muting to on mod
    - * Figures in ( ) stand for DC voltage with the FM/AM selector circuit set

	SVDBB204	FM Variable capacitor
2 , 304	MA151K	
	MA150	
	SVDBB113	AM Variable capacitor
	MA151A	
	OA99	
	MA1130A	13V Zener
	SVDMZ303A	3V Zener
4 , 905 9 , 910 5 , 916 9 , 920 4 , 925	MA150	
	OA99	
	MA1062	6.2V Zener
	SVDSR1K2	
	SVDMZ327	27V Zener


5
6
7
8
9
10
11
B
Crystal (4.5 MHz)
Q901～905 2SC945 LOOP FILTER
Q906, 907 2SC1684 SWITCHING
Q908 2SA564 SWITCHING
Q909, 913 2SC828 DRIVE
Q911, 912, 914 2SA564 BUFFER
Q915 2SA564 BUFFER
Q708 2SD762 REGULATOR
IC901 SVIμPB553C-E PRE SCALER
IC902 SVIμPD1704CL CPU
IC903 SVITC5067BP FL DRIVE
FM ANT
GND
AM ANT
300Ω
75Ω
S1 (SELECTOR)
1. tuner
2. phono
3. aux
BATTERIS 1.5V x 3
Z901 100K x 7
Z902 100K x 7
Z903 330P x 7
Z904 330P x 7
S901 MEMO
S902 1
S903 2
S904 3
S905 4
S906 5
S907 6
S908 7
S909 8
F — Filament
G1～G7 — Grid
a～g — Segment
ST — Stereo indicator
▯ — FM frequency decimal point
AM, kHz — AM broadcast indicator
FM, MHz — FM broadcast indicator
MEMO — Memory indicator
(Fluorescent Display Tube)
EO GND EO CE SD FM In PSC INI AM in AM/FM PHONO TUNER A B C D
BCD code
H 5V
L -26V
VDD x1 x2 MUT d1 d2 d3 d4 d5 d6 K3 K2 K1 K0 g f e d c b a
S1-3 1(tuner) 2(phono) 3(aux)
S1-4
S1-5
J122
C MODE)

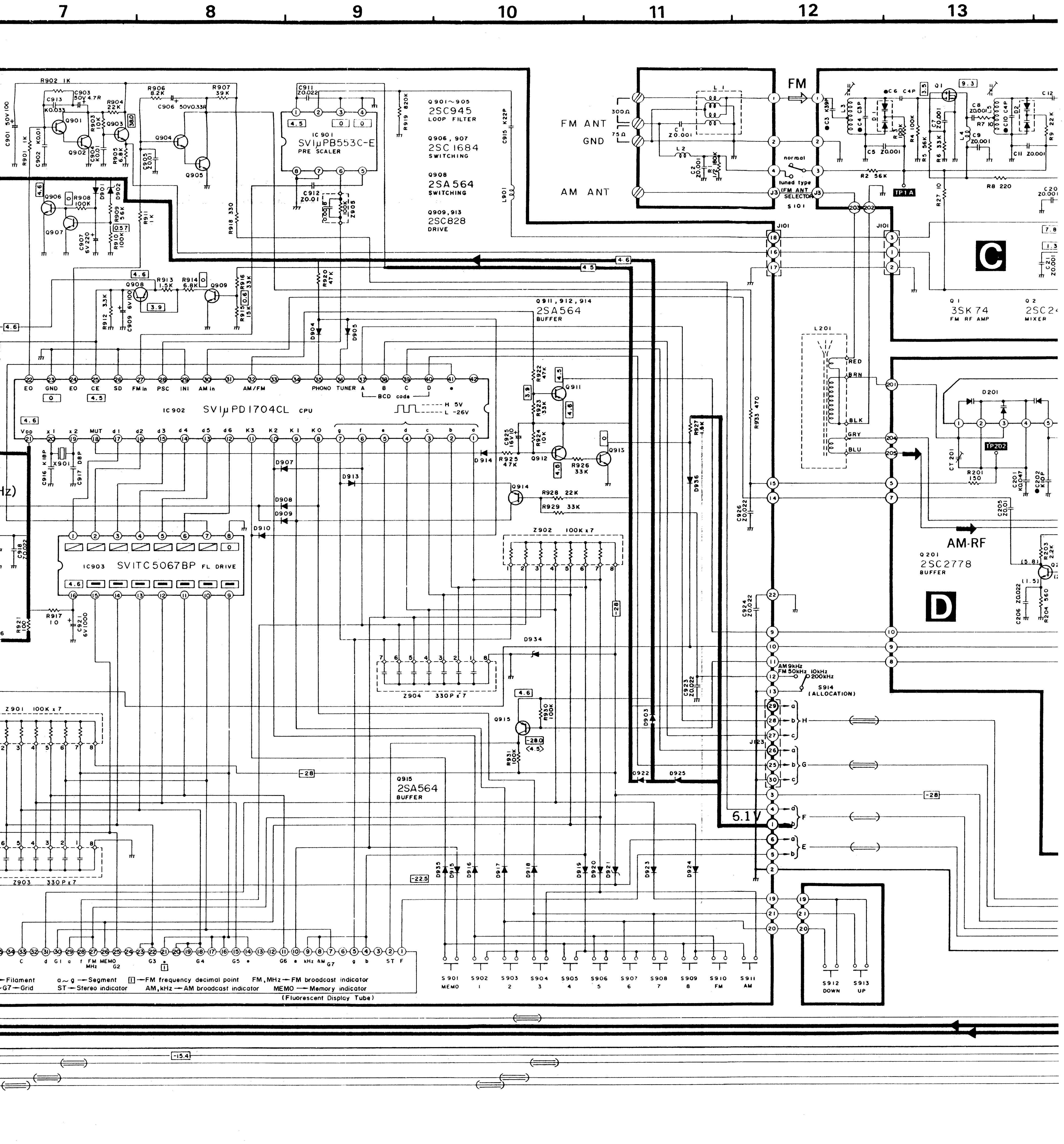
:

1-1 ~ **S1-5** : Input selector switch in "**tuner**" position.
(① tuner ←→ ② phono ←→ ③ aux)
2-1 ~ **S2-4** : Tape monitor switch in "**source**" position.
(① tape 2 ←→ ② source ←→ ③ tape 1)
3-1 ~ **S3-4** : Recording mode switch in "**source**" position.
(① tape 2 ▶ 1 ←→ ② source ←→ ③ tape 1 ▶ 2)
101 : FM antenna selector switch in "**normal**" position.
(normal ←→ tuned type)
901 : Memory set switch
902 ~ S909 : Preset tuning switch.
(S902 : 1 ch. S903 : 2 ch. S904 : 3 ch.
S905 : 4 ch. S906 : 5 ch. S907 : 6 ch.
S908 : 7 ch. S909 : 8 ch.)

7. **S910** : FM tuner selection switch.
8. **S911** : AM tuner selection switch.
9. **S912** : Manual tuning "**down**" switch.
10. **S913** : Manual tuning "**up**" switch.
11. **S914** : FM/AM allocation selector switch in "**FM 0.2MHz/AM 10kHz**" step position.
(FM 0.2MHz/AM 10kHz ←→ FM 0.05MHz/AM 9kHz)
12. Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.
    - * Figures in ▭ stand for DC voltage in FM/AM signal reception mode.
    - * Figures in ‹ › stand for DC voltage in FM stereo signal receptiom mode.
    - * Figures in ⌜ ⌟ stand for DC voltage in FM (no signal) muting to on mode.
    - * Figures in ( ) stand for DC voltage with the FM/AM selector circuit set at AM.

* ▨ marked terminal : 5V or
* ⊟ marked terminal : 5V or

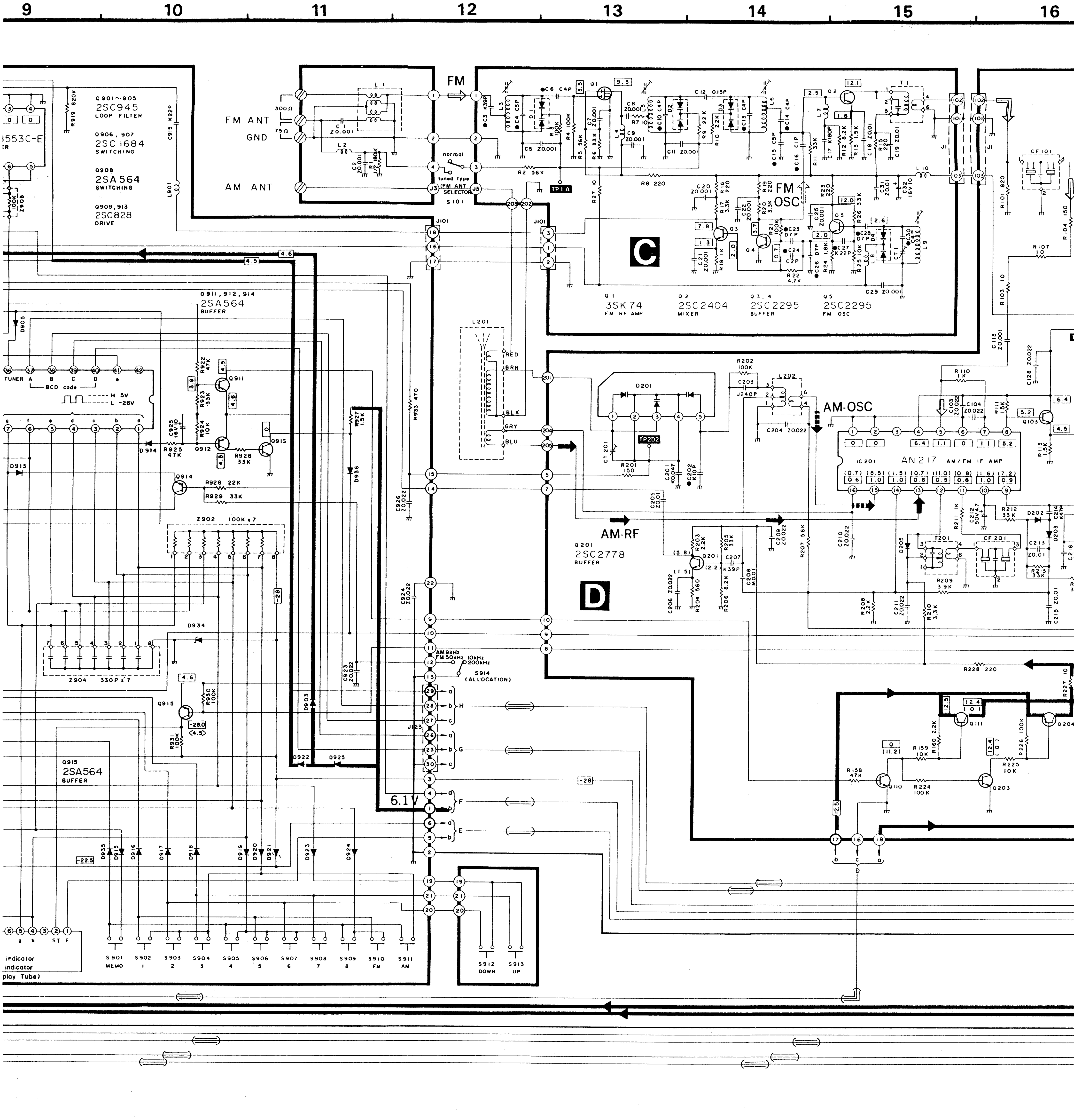
13. Transistor and IC terminals which ca
or are subject to change according to
14. Signal lines
⇨ FM/AM composite signal
➡ Audio frequency signal
▬ Positive voltage lines


7
8
9
10
11
12
13
FM
FM ANT
GND
AM ANT
300Ω
75Ω
normal
tuned type
(FM ANT SELECTOR)
S101
J101
C
D
AM-RF
Q901~905
2SC945
LOOP FILTER
Q906, 907
2SC1684
SWITCHING
Q908
2SA564
SWITCHING
Q909, 913
2SC828
DRIVE
Q911, 912, 914
2SA564
BUFFER
Q915
2SA564
BUFFER
IC901
SVIμPB553C-E
PRE SCALER
IC902 SVIμPD1704CL CPU
IC903 SVITC5067BP FL DRIVE
Q1
3SK74
FM RF AMP
Q2
2SC2
MIXER
Q201
2SC2778
BUFFER
L201
D201
TP1A
TP202
RED
BRN
BLK
GRY
BLU
EO
GND
CE
SD
FM in
PSC
INI
AM in
AM/FM
PHONO
TUNER
A
B
C
D
BCD code
H 5V
L -26V
VDD
MUT
Z901 100K x 7
Z902 100K x 7
Z903 330P x 7
Z904 330P x 7
AM 9kHz FM 50kHz
10kHz 200kHz
S914 (ALLOCATION)
6.1V
S901 MEMO
S902 1
S903 2
S904 3
S905 4
S906 5
S907 6
S908 7
S909 8
S910 FM
S911 AM
S912 DOWN
S913 UP
F—Filament
G7—Grid
a ~ g —Segment
ST—Stereo indicator
⊡—FM frequency decimal point
AM, kHz—AM broadcast indicator
FM, MHz—FM broadcast indicator
MEMO—Memory indicator
(Fluorescent Display Tube)
4.6
4.5
3.9
0.57
-28
-22.5
-28.0
(4.5)
-15.4
(5.8)
(1.5)

7. **S910** : FM tuner selection switch.
8. **S911** : AM tuner selection switch.
9. **S912** : Manual tuning "**down**" switch.
10. **S913** : Manual tuning "**up**" switch.
11. **S914** : FM/AM allocation selector switch in "**FM 0.2MHz/AM 10kHz**" step position.
(FM 0.2MHz/AM 10kHz ◄─► FM 0.05MHz/AM 9kHz)
12. Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.
    - * Figures in ▭ stand for DC voltage in FM/AM signal reception mode.
    - * Figures in < > stand for DC voltage in FM stereo signal receptiom mode.
    - * Figures in ⌜ ⌟ stand for DC voltage in FM (no signal) muting to on mode.
    - * Figures in ( ) stand for DC voltage with the FM/AM selector circuit set at AM.

* ▨ marked terminal : 5V or 0V output.
* ⊟ marked terminal : 5V or −26V output.

13. Transistor and IC terminals which carry no voltage indication emit 5V pulse waveforms or are subject to change according to the frequency or input signal levels.
14. Signal lines
    - ⇨ FM/AM composite signal
    - ➡ Audio frequency signal ➡/▪▪▪▪➡ AM signal
    - ▬ Positive voltage lines


9
10
11
12
13
14
15
16
FM
FM ANT
GND
AM ANT
300Ω
75Ω
normal
tuned type (FM ANT SELECTOR)
S101
C
D
FM OSC
AM-OSC
AM-RF
TP1A
TP202
IC201 AN217 AM/FM IF AMP
Q1 3SK74 FM RF AMP
Q2 2SC2404 MIXER
Q3, 4 2SC2295 BUFFER
Q5 2SC2295 FM OSC
Q201 2SC2778 BUFFER
Q901~905 2SC945 LOOP FILTER
Q906, 907 2SC1684 SWITCHING
Q908 2SA564 SWITCHING
Q909, 913 2SC828 DRIVE
Q911, 912, 914 2SA564 BUFFER
Q915 2SA564 BUFFER
Z902 100K x 7
Z904 330P x 7
TUNER A B C D e
BCD code
H 5V
L -26V
AM 9kHz FM 50kHz 10kHz 200kHz
S914 (ALLOCATION)
6.1V
S901 MEMO
S902 1
S903 2
S904 3
S905 4
S906 5
S907 6
S908 7
S909 8
S910 FM
S911 AM
S912 DOWN
S913 UP
J101
J123
L201
CF101
CF201
T201
RED
BRN
BLK
GRY
BLU

ut.
ge indication emit 5V pulse waveforms
ncy or input signal levels.

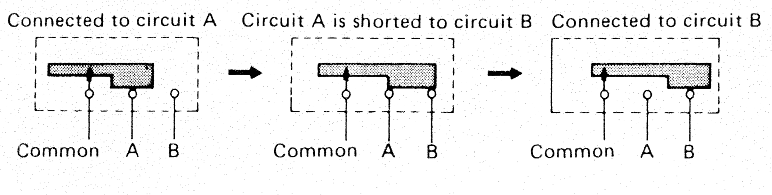
/▪▪▪▪▶ AM signal

IMPORTANT SAFETY NOTICE

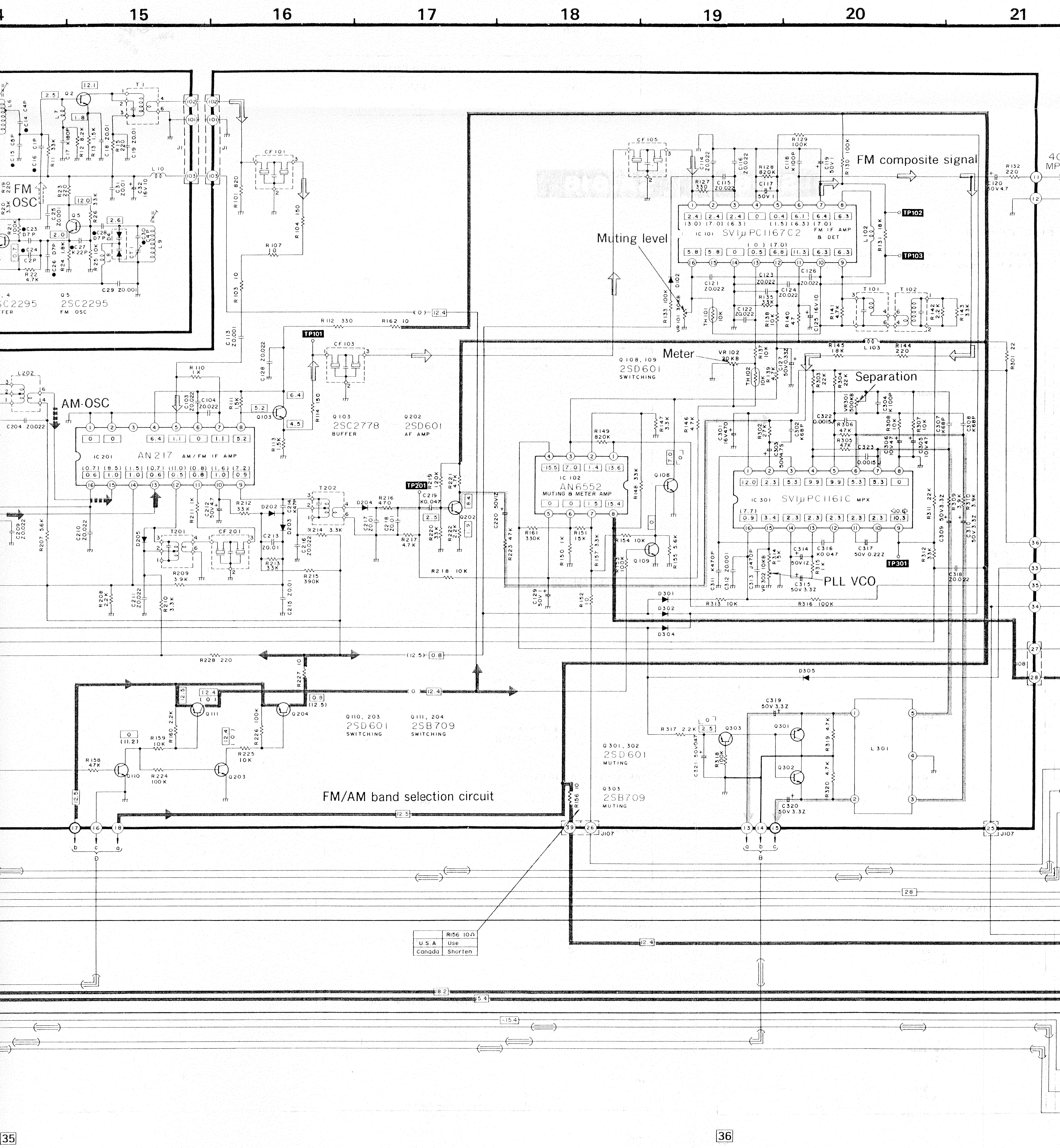
The shaded area on this schematic diagram incorporates special features important for safety. When servicing it is essential that only manufacturer's specified parts be used for the critical components in the shaded areas of the schematic.

Shorting Switch (S1, S4 ~ S8, S706 and S707)

This unit uses a shorting switch. As illustrated below, the circuit is shorte
In the circuit diagram, the shaded area represents the common terminal.



Connected to circuit A
Circuit A is shorted to circuit B
Connected to circuit B
Common
A
B
Common
A
B
Common
A
B

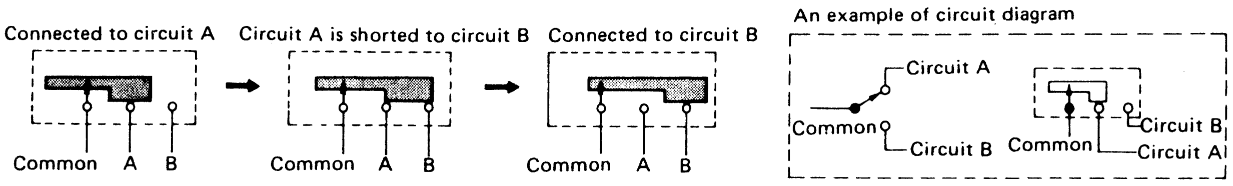


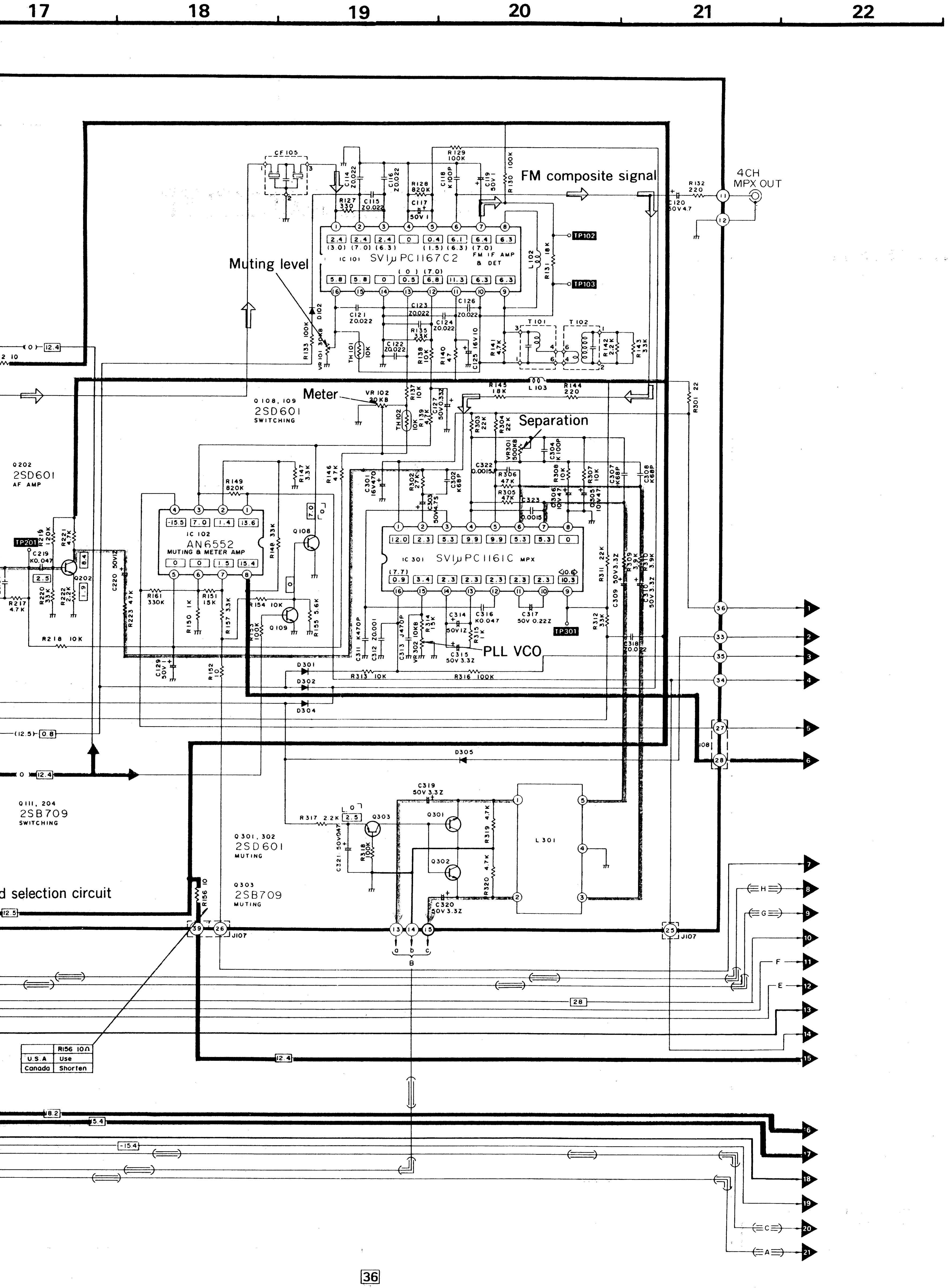
15
16
17
18
19
20
21
FM OSC
Q5 2SC2295 FM OSC
2SC2295
AM-OSC
IC201 AN217 AM/FM IF AMP
Q103 2SC2778 BUFFER
Q202 2SD601 AF AMP
TP101
TP201
CF101
CF103
CF105
CF201
T201
T202
L202
J1
FM composite signal
Muting level
IC101 SVIμPC1167C2 FM IF AMP & DET
TP102
TP103
T101
T102
L103
Meter
VR102 20KB
Q108, 109 2SD601 SWITCHING
IC102 AN6552 MUTING & METER AMP
Separation
IC301 SVIμPC1161C MPX
TP301
PLL VCO
L301
Q301, 302 2SD601 MUTING
Q303 2SB709 MUTING
Q110, 203 2SD601 SWITCHING
Q111, 204 2SB709 SWITCHING
FM/AM band selection circuit
J107
R156 10Ω
U.S.A Use
Canada Shorten

TANT SAFETY NOTICE
on this schematic diagram incor
atures important for safety.
is essential that only manufactur
rts be used for the critical com
aded areas of the schematic.

Shorting Switch (S1, S4 ~ S8, S706 and S707)

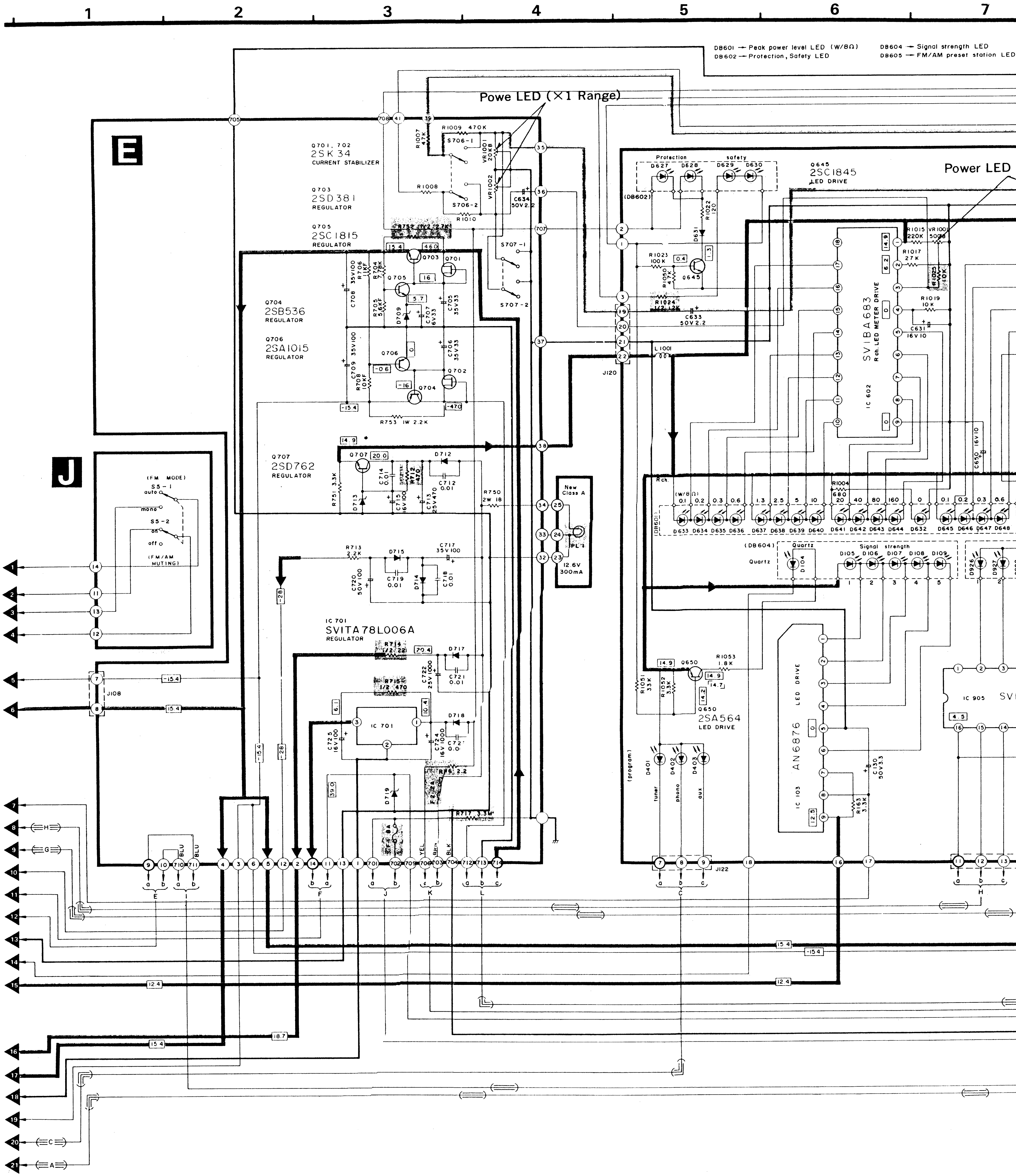
This unit uses a shorting switch. As illustrated below, the circuit is shorted to the next circuit without being opened. In the circuit diagram, the shaded area represents the common terminal.


Connected to circuit A
Circuit A is shorted to circuit B
Connected to circuit B
Common
A
B
An example of circuit diagram
Circuit A
Common
Circuit B
Circuit B
Common
Circuit A


17
18
19
20
21
22
CF 105
FM composite signal
4CH
MPX OUT
R132 220
C120 50V4.7
IC 101 SVI μPC1167C2
FM IF AMP & DET
TP102
TP103
Muting level
T101
T102
Meter
VR 102 20KB
L 103
Q108, 109
2SD601
SWITCHING
Q202
2SD601
AF AMP
TP201
IC 102
AN6552
MUTING & METER AMP
Q108
Q109
Separation
VR301 500KB
IC 301 SVI μPC1161C MPX
TP301
PLL VCO
VR302 10KB
D301
D302
D304
D305
Q111, 204
2SB709
SWITCHING
Q301, 302
2SD601
MUTING
Q303
2SB709
MUTING
Q301
Q302
Q303
L301
d selection circuit
R156 10
J107
R156 10Ω
U.S.A | Use
Canada | Shorten
12.4
12.5
0.8
8.2
15.4
-15.4
28
H
G
F
E
C
A
B
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21

■ SCHEMATIC DIAGRAM Ⓑ (E, F, G, H, I, J and K P.C.B.) ...MODEL **SA-616**

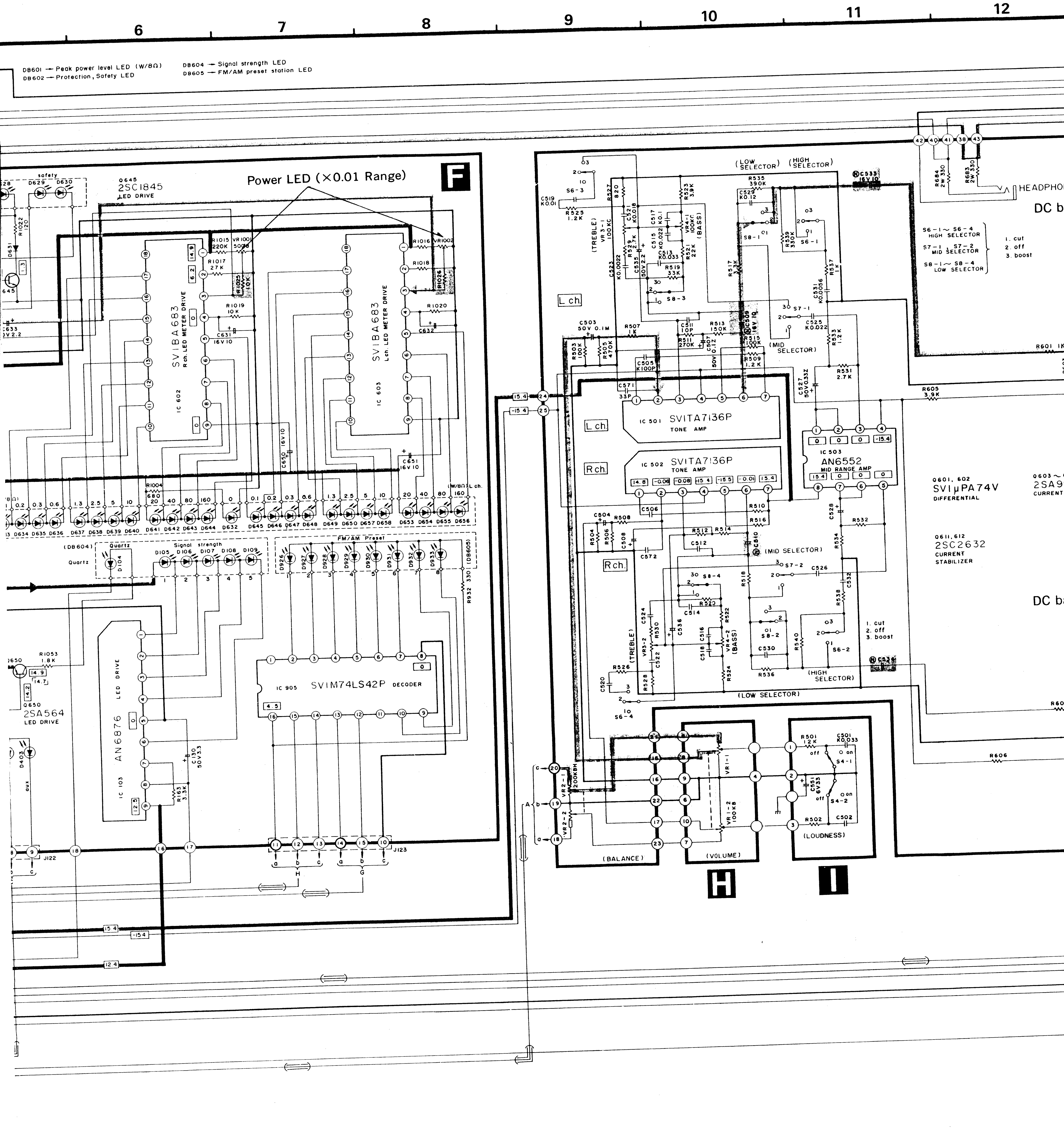
(This schemctic diagram may be modified at any time with the development of new technology.)

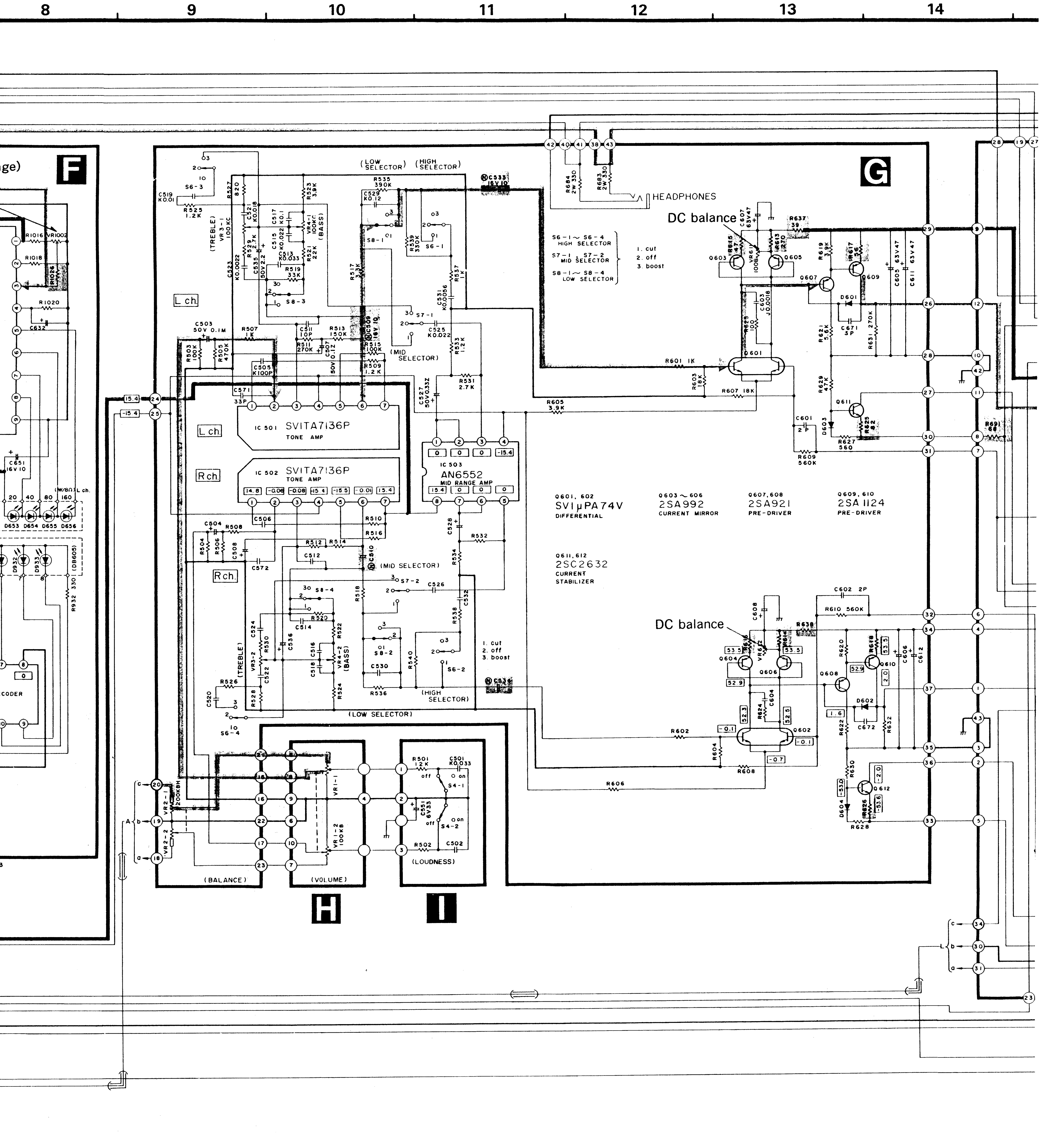


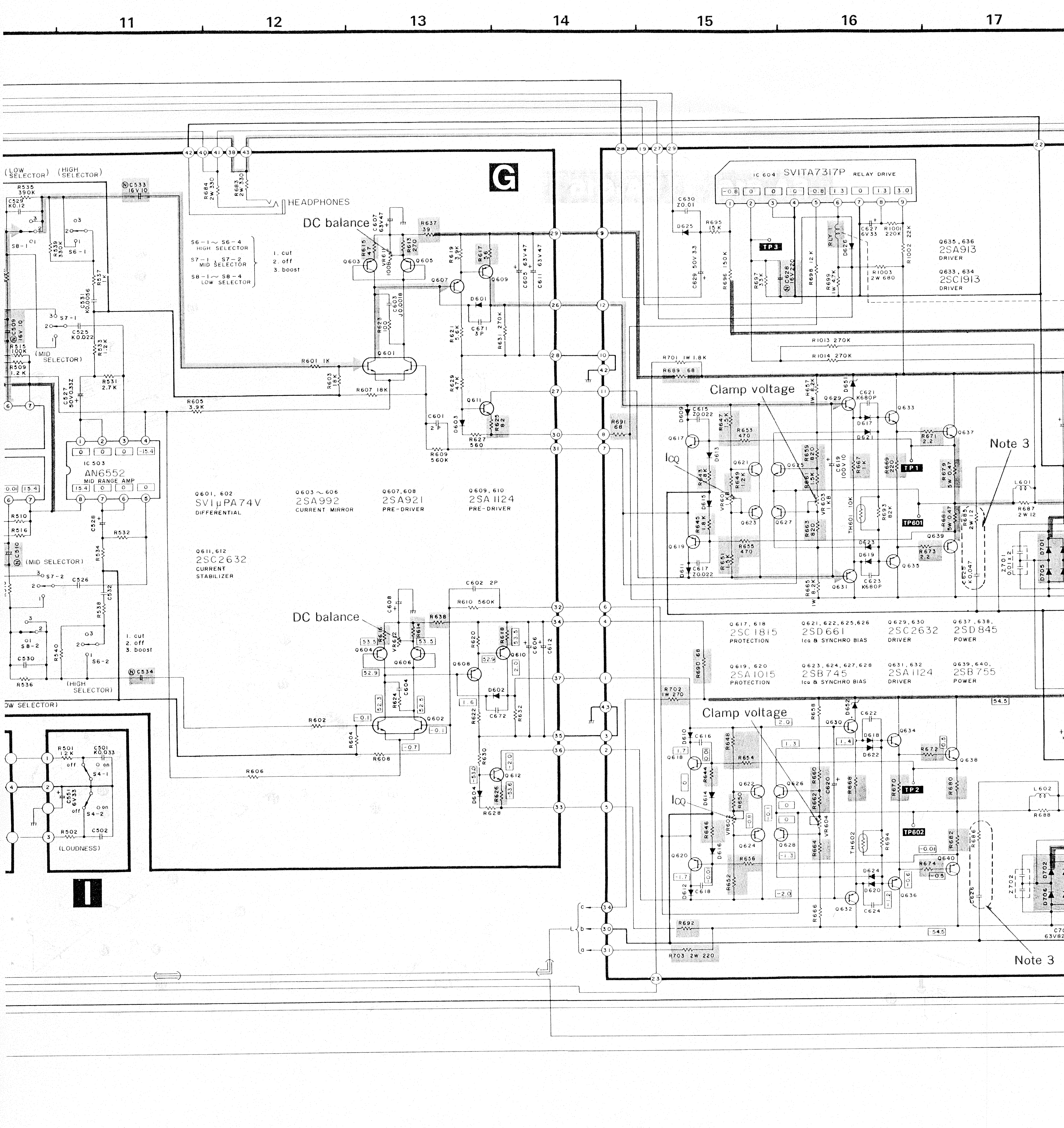
1
2
3
4
5
6
7
DB601 — Peak power level LED (W/8Ω)
DB602 — Protection, Safety LED
DB604 — Signal strength LED
DB605 — FM/AM preset station LED
Powe LED (×1 Range)
Power LED
E
J
Q701, 702
2SK34
CURRENT STABILIZER
Q703
2SD381
REGULATOR
Q705
2SC1815
REGULATOR
Q704
2SB536
REGULATOR
Q706
2SA1015
REGULATOR
Q707
2SD762
REGULATOR
IC 701
SVITA78L006A
REGULATOR
R1009 470K
R1007 47K
S706-1
S706-2
VR1001 20KB
VR1002
R1008
R1010
C634 50V2.2
S707-1
S707-2
R753 1W 2.2K
R750 2W 18
R751 3.3K
R713 2.2K
C717 35V100
C720 50V10
C719 0.01
C718 0.01
C714 0.01
C712 0.01
C721 0.01
C722 25V1000
C725 16V100
C724 16V1000
R717 3.3M
New Class A
PL1
12.6V 300mA
Protection
safety
D627
D628
D629
D630
(DB602)
Q645
2SC1845
LED DRIVE
R1022 120
R1023 100K
R1050 4.7K
R1024
C633 50V2.2
L1001
J120
J108
J122
R1015 220K
VR1001 500B
R1017 27K
R1019 10K
R1025 10K
C631 16V10
C650 16V10
SV1BA683
Rch. LED METER DRIVE
IC 602
R1004 680
(W/8Ω)
0.1 0.2 0.3 0.6 1.3 2.5 5 10 20 40 80 160 0
(DB601)
D633 D634 D635 D636 D637 D638 D639 D640 D641 D642 D643 D644 D632 D645 D646 D647 D648
(DB604)
Quartz
D104
Signal strength
D105 D106 D107 D108 D109
D926
D927
Q650
2SA564
LED DRIVE
R1053 1.8K
R1051 33K
R1052 3.3K
AN6876
LED DRIVE
IC 103
C130 50V3.3
R163 3.3K
D401
D402
D403
tuner
phono
aux
(program)
IC 905
(FM MODE)
S5-1
auto
mono
S5-2
on
off
(FM/AM MUTING)
BLU
YEL
BRN
BLK
15.4
-15.4
12.4
18.7
-28
14.9

A-616

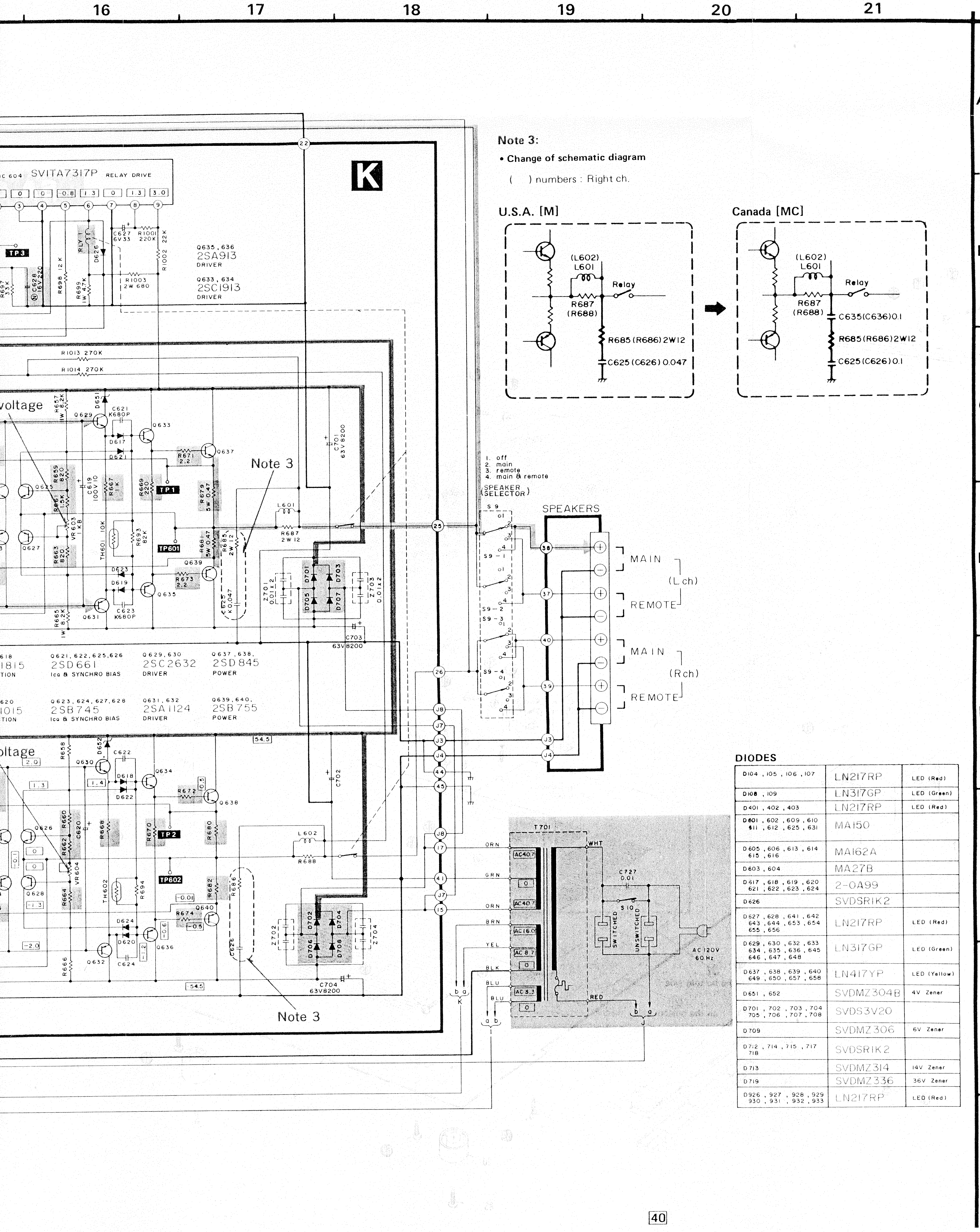
new technology.)


6
7
8
9
10
11
12
DB601 — Peak power level LED (W/8Ω)
DB602 — Protection, Safety LED
DB604 — Signal strength LED
DB605 — FM/AM preset station LED
Power LED (×0.01 Range)
F
Q645
2SC1845
LED DRIVE
safety
D629
D630
R1022
120
SVIBA683
R ch. LED METER DRIVE
IC 602
SVIBA683
L ch. LED METER DRIVE
IC 603
R1015
220K
VR1001
500B
R1017
27K
R1025
10K
R1019
10K
C631
16V10
R1016
VR1002
R1018
R1026
R1020
C632
C650
16V10
C651
16V10
R1004
680
0.1
0.2
0.3
0.6
1.3
2.5
5
10
20
40
80
160
(W/8Ω) L ch.
D634 D635 D636 D637 D638 D639 D640 D641 D642 D643 D644 D632
D645 D646 D647 D648 D649 D650 D657 D658 D653 D654 D655 D656
(DB604)
Quartz
D104
Signal strength
D105
D106
D107
D108
D109
FM/AM Preset
(DB605)
D926
D927
D928
D929
D930
D931
D932
D933
R932
330
AN6876
LED DRIVE
IC 103
R163
3.3K
C110
50V3.3
Q650
2SA564
LED DRIVE
R1053
1.8K
D403
aux
IC 905
SVIM74LS42P
DECODER
J122
J123
15.4
-15.4
12.4
S6-3
C519
K0.01
R525
1.2K
(TREBLE)
VR3-1
100KC
R527
820
C521
K0.018
C517
K0.1
C515
K0.022
C513
K0.033
R523
3.9K
VR4-1
100KC
(BASS)
R521
22K
R519
33K
R529
2.7K
C523
K0.0022
C535
50V2.2
S8-3
L ch.
(LOW SELECTOR)
(HIGH SELECTOR)
R535
390K
C529
K0.12
C533
16V10
S8-1
R539
330K
S6-1
R517
3.3K
R537
1K
C531
K0.056
S7-1
C525
K0.022
C503
50V 0.1M
R507
1K
C511
10P
R513
150K
C509
16V10
R515
100K
R509
1.2K
R503
R505
470K
R511
270K
C507
50V0.12
C505
K100P
C571
33P
(MID SELECTOR)
R533
1.2K
R531
2.7K
C527
50V0.33Z
IC 501
SVITA7136P
TONE AMP
IC 502
SVITA7136P
TONE AMP
R ch.
IC 503
AN6552
MID RANGE AMP
C504
R508
R504
R506
C508
C506
C572
R510
R516
R512
R514
C512
C510
(MID SELECTOR)
S7-2
C526
S8-4
R523
C514
C524
R530
VR3-2
C522
C536
C516
C518
VR4-2
(BASS)
R522
R524
S8-2
C530
R536
R518
R538
C532
R540
S6-2
C534
(HIGH SELECTOR)
(LOW SELECTOR)
R526
C520
R528
S6-4
(TREBLE)
R528
R534
C528
R532
VR2-1
200KBH
VR2-2
(BALANCE)
VR1-1
VR1-2
100KB
(VOLUME)
R501
1.2K
C501
K0.033
S4-1
C551
6V33
S4-2
R502
C502
(LOUDNESS)
H
I
1. cut
2. off
3. boost
R684
2W 330
R683
2W 330
HEADPHO
DC b
S6-1 ~ S6-4 HIGH SELECTOR
S7-1 S7-2 MID SELECTOR
S8-1 ~ S8-4 LOW SELECTOR
R601 1K
R605
3.9K
Q601, 602
SVIμPA74V
DIFFERENTIAL
Q603 ~
2SA9
CURRENT
Q611, 612
2SC2632
CURRENT
STABILIZER
DC b
R606


8
9
10
11
12
13
14
ge)
F
G
H
I
HEADPHONES
DC balance
DC balance
(LOW SELECTOR)
(HIGH SELECTOR)
(MID SELECTOR)
(LOW SELECTOR)
(HIGH SELECTOR)
S6-1 ~ S6-4 HIGH SELECTOR
S7-1 , S7-2 MID SELECTOR
S8-1 ~ S8-4 LOW SELECTOR
1. cut
2. off
3. boost
L ch.
R ch.
IC 501 SVITA7136P TONE AMP
IC 502 SVITA7136P TONE AMP
IC 503 AN6552 MID RANGE AMP
Q601, 602 SV1μPA74V DIFFERENTIAL
Q603 ~ 606 2SA992 CURRENT MIRROR
Q607, 608 2SA921 PRE-DRIVER
Q609, 610 2SA1124 PRE-DRIVER
Q611, 612 2SC2632 CURRENT STABILIZER
(TREBLE)
(BASS)
(BALANCE)
(VOLUME)
(LOUDNESS)
VR3-1 100KC
VR4-1 100KC
VR2-1 200KBH
VR1-1
VR1-2 100KB
R684 2W 330
R683 2W 330
R535 390K
R525 1.2K
R507 1K
R511 270K
R513 150K
R515 100K
R509 1.2K
R531 2.7K
R605 3.9K
R601 1K
R607 18K
R609 560K
R610 560K
R627 560
R631 270K
R637 39
R691 68
R501 1.2K
R502
C501 K0.033
C502
C551 6V33
C533 16V10
C503 50V 0.1M
C505 K100P
C571 33P
C601 2P
C602 2P
C607 63V47
C605 63V47
C611 63V47
C671 5P
D601
D602
D603
D604
D653 D654 D655 D656
D932 D933 (D8605)
R932 330
C651 16V10
(W/8Ω) L ch.
20 40 80 160
CODER
S4-1
S4-2
0 on
off
15.4
-15.4
14.8 -0.06 -0.08 -15.4 -15.5 -0.01 15.4
53.5
52.9
52.3
52.5
-0.1
-0.7
-1.6
-2.0
-53.0
-53.6
A
a b c



11
12
13
14
15
16
17
G
I
HEADPHONES
DC balance
DC balance
Clamp voltage
Clamp voltage
Note 3
Note 3
IC 604 SVITA7317P RELAY DRIVE
IC 503 AN6552 MID RANGE AMP
S6-1 ~ S6-4 HIGH SELECTOR
S7-1, S7-2 MID SELECTOR
S8-1 ~ S8-4 LOW SELECTOR
1. cut
2. off
3. boost
(LOW SELECTOR)
(HIGH SELECTOR)
(MID SELECTOR)
(LOUDNESS)
Q601, 602 SVIμPA74V DIFFERENTIAL
Q603 ~ 606 2SA992 CURRENT MIRROR
Q607, 608 2SA921 PRE-DRIVER
Q609, 610 2SA1124 PRE-DRIVER
Q611, 612 2SC2632 CURRENT STABILIZER
Q617, 618 2SC1815 PROTECTION
Q619, 620 2SA1015 PROTECTION
Q621, 622, 625, 626 2SD661 Icq & SYNCHRO BIAS
Q623, 624, 627, 628 2SB745 Icq & SYNCHRO BIAS
Q629, 630 2SC2632 DRIVER
Q631, 632 2SA1124 DRIVER
Q637, 638 2SD845 POWER
Q639, 640 2SB755 POWER
Q635, 636 2SA913 DRIVER
Q633, 634 2SC1913 DRIVER
TP1
TP2
TP3
TP601
TP602
ICQ
54.5


16
17
18
19
20
21
A
B
C
D
E
F
G
H
K
SVITA7317P RELAY DRIVE
TP3
TP1
TP601
TP2
TP602
Q635, 636
2SA913
DRIVER
Q633, 634
2SC1913
DRIVER
R1013 270K
R1014 270K
voltage
Note 3
Q621, 622, 625, 626
2SD661
Ico & SYNCHRO BIAS
Q629, 630
2SC2632
DRIVER
Q637, 638,
2SD845
POWER
Q623, 624, 627, 628
2SB745
Ico & SYNCHRO BIAS
Q631, 632
2SA1124
DRIVER
Q639, 640,
2SB755
POWER
1. off
2. main
3. remote
4. main & remote
SPEAKER (SELECTOR)
SPEAKERS
MAIN
REMOTE
(L ch)
MAIN
REMOTE
(R ch)
T701
AC 120V
60 Hz
SWITCHED
UNSWITCHED
S10
ORN
GRN
BRN
YEL
BLK
BLU
WHT
RED
C701 63V8200
C703 63V8200
C704 63V8200
Note 3

Note 3:

- **Change of schematic diagram**

( ) numbers : Right ch.

U.S.A. [M]

Canada [MC]

(L602)
L601
Relay
R687
(R688)
R685 (R686) 2W12
C625 (C626) 0.047
(L602)
L601
Relay
R687
(R688)
C635 (C636) 0.1
R685 (R686) 2W12
C625 (C626) 0.1

DIODES

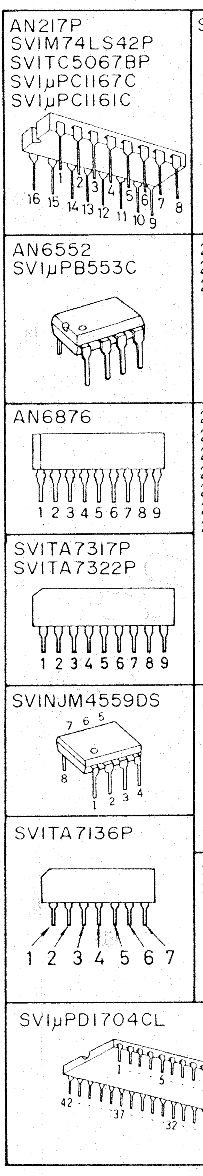
D104, 105, 106, 107	LN217RP	LED (Red)
D108, 109	LN317GP	LED (Green)
D401, 402, 403	LN217RP	LED (Red)
D601, 602, 609, 610 611, 612, 625, 631	MA150	
D605, 606, 613, 614 615, 616	MA162A	
D603, 604	MA27B	
D617, 618, 619, 620 621, 622, 623, 624	2-0A99	
D626	SVDSR1K2	
D627, 628, 641, 642 643, 644, 653, 654 655, 656	LN217RP	LED (Red)
D629, 630, 632, 633 634, 635, 636, 645 646, 647, 648	LN317GP	LED (Green)
D637, 638, 639, 640 649, 650, 657, 658	LN417YP	LED (Yellow)
D651, 652	SVDMZ304B	4V Zener
D701, 702, 703, 704 705, 706, 707, 708	SVDS3V20	
D709	SVDMZ306	6V Zener
D712, 714, 715, 717 718	SVDSR1K2	
D713	SVDMZ314	14V Zener
D719	SVDMZ336	36V Zener
D926, 927, 928, 929 930, 931, 932, 933	LN217RP	LED (Red)

Notes 2:

1. **S4-1, S4-2** :
2. **S5-1, S5-2** :
3. **S6-1 ∼ S6-4** :
4. **S7-1, S7-2** :
5. **S8-1 ∼ S8-4** :
6. **S9** :
7. **S10** :
8. **S706-1, S706-2** :
9. **S707-1, S707-2** :

The shad
porates s
When ser
er's spec
ponents

*** Terminal guide of**


AN217P
SVIM74LS42P
SVITC5067BP
SVIμPC1167C
SVIμPC1161C
AN6552
SVIμPB553C
AN6876
SVITA7317P
SVITA7322P
SVINJM4559DS
SVITA7136P
SVIμPD1704CL

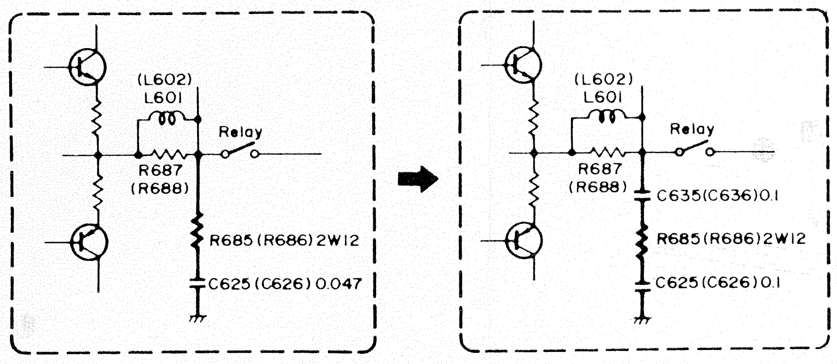
19
20
21
A
B
C
D
E
F
G
H

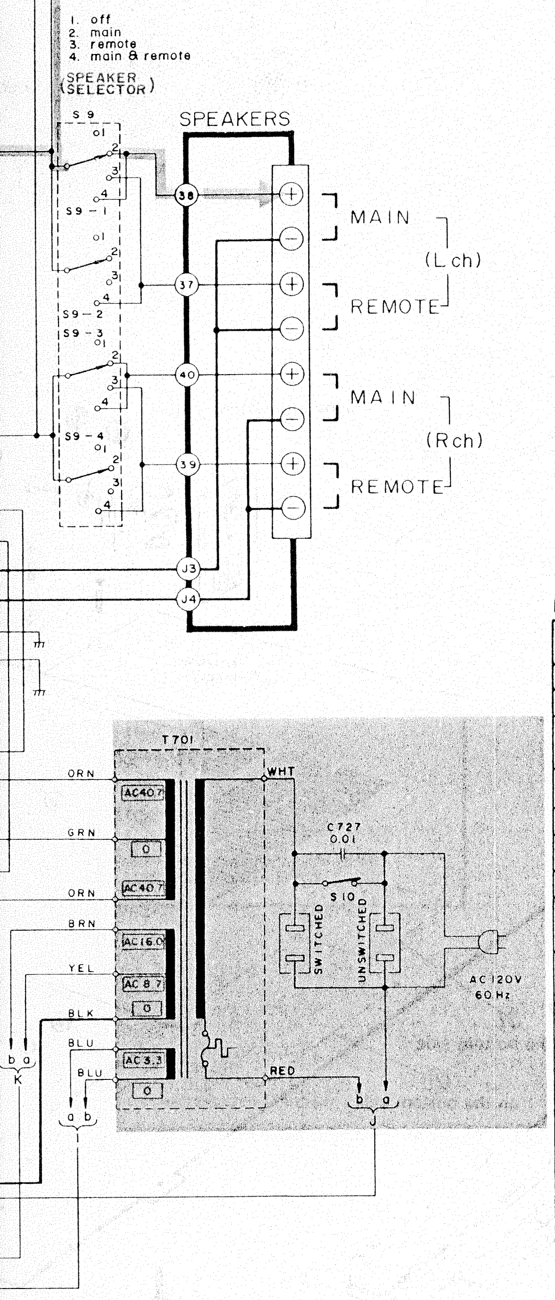
Note 3:

- **Change of schematic diagram**

( ) numbers : Right ch.

U.S.A. [M] **Canada [MC]**


(L602)
L601
Relay
R687
(R688)
R685 (R686) 2W12
C625 (C626) 0.047
(L602)
L601
Relay
R687
(R688)
C635(C636)0.1
R685(R686)2W12
C625(C626)0.1


1. off
2. main
3. remote
4. main & remote
(SPEAKER SELECTOR)
S 9
S9-1
S9-2
S9-3
S9-4
SPEAKERS
38
37
40
39
J3
J4
MAIN
REMOTE
(L ch)
MAIN
REMOTE
(R ch)
T701
ORN
GRN
ORN
BRN
YEL
BLK
BLU
BLU
AC40.7
0
AC40.7
AC16.0
AC 8.7
0
AC3.3
0
WHT
RED
C727
0.01
S10
SWITCHED
UNSWITCHED
AC 120V
60 Hz
b a
K
a b
I
b a
J

Notes 2:

1. **S4-1, S4-2** : Loudness switch in "**off**" position.
2. **S5-1, S5-2** : FM·AM muting/FM mode switch in "**on/FM auto**" position.
   (on/FM auto off/FM mono)
3. **S6-1 ~ S6-4** : Acoustic high selector switch in "**off**" position.
   (① high cut ↔ ② off ↔ ③ high boost)
4. **S7-1, S7-2** : Mid range selector switch in "**off**" position.
   (① mid cut ↔ ② off ↔ ③ mid boost)
5. **S8-1 ~ S8-4** : Acoustic low selector switch in "**off**" position.
   (① low cut ↔ ② off ↔ ③ low boost)
6. **S9** : Speaker selector switch in "**main**" position.
   (① off ↔ ② mian ↔ ③ remote ↔ ④ main & remote)
7. **S10** : Power source switch in "**on**" position.
8. **S706-1, S706-2** : Power display range selector switch in "**X1**" position.
   (X1 ↔ X0.01)
9. **S707-1, S707-2** : Power display switch in "**on**" position.

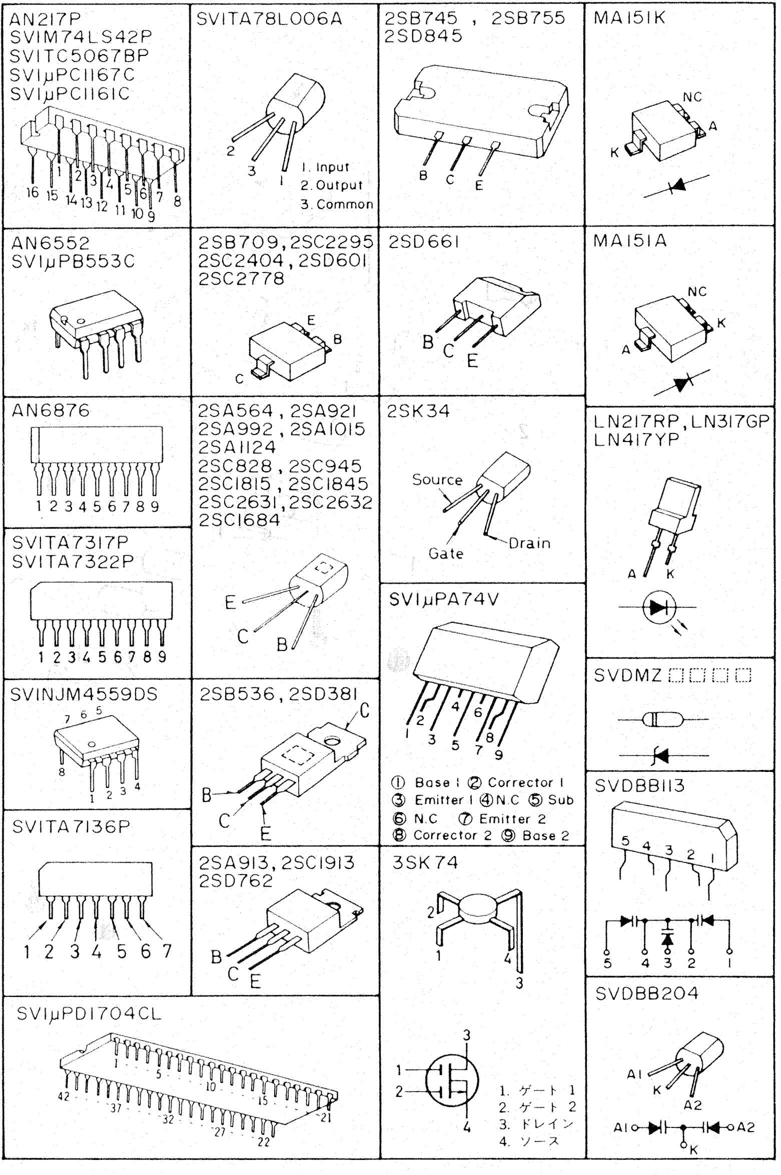
IMPORTANT SAFETY NOTICE

The shaded area on this schematic diagram incorporates special features important for safety.
When servicing it is essential that only manufacturer's specified parts be used for the critical components in the shaded areas of the schematic.

DIODES

D104, 105, 106, 107	LN217RP	LED (Red)
D108, 109	LN317GP	LED (Green)
D401, 402, 403	LN217RP	LED (Red)
D601, 602, 609, 610 611, 612, 625, 631	MA150	
D605, 606, 613, 614 615, 616	MA162A	
D603, 604	MA27B	
D617, 618, 619, 620 621, 622, 623, 624	2-0A99	
D626	SVDSRIK2	
D627, 628, 641, 642 643, 644, 653, 654 655, 656	LN217RP	LED (Red)
D629, 630, 632, 633 634, 635, 636, 645 646, 647, 648	LN317GP	LED (Green)
D637, 638, 639, 640 649, 650, 657, 658	LN417YP	LED (Yellow)
D651, 652	SVDMZ304B	4V Zener
D701, 702, 703, 704 705, 706, 707, 708	SVDS3V20	
D709	SVDMZ306	6V Zener
D712, 714, 715, 717 718	SVDSRIK2	
D713	SVDMZ314	14V Zener
D719	SVDMZ336	36V Zener
D926, 927, 928, 929 930, 931, 932, 933	LN217RP	LED (Red)

*** Terminal guide of transistors and IC's**


AN217P
SVIM74LS42P
SVITC5067BP
SVIμPC1167C
SVIμPC1161C
1 2 3 4 5 6 7 8
16 15 14 13 12 11 10 9
SVITA78L006A
1. Input
2. Output
3. Common
2SB745, 2SB755
2SD845
B C E
MA151K
NC
A
K
AN6552
SVIμPB553C
2SB709, 2SC2295
2SC2404, 2SD601
2SC2778
E B C
2SD661
B C E
MA151A
NC
K
A
AN6876
1 2 3 4 5 6 7 8 9
2SA564, 2SA921
2SA992, 2SA1015
2SA1124
2SC828, 2SC945
2SC1815, 2SC1845
2SC2631, 2SC2632
2SC1684
E C B
2SK34
Source
Gate
Drain
LN217RP, LN317GP
LN417YP
A K
SVITA7317P
SVITA7322P
1 2 3 4 5 6 7 8 9
SVIμPA74V
① Base 1 ② Corrector 1
③ Emitter 1 ④ N.C ⑤ Sub
⑥ N.C ⑦ Emitter 2
⑧ Corrector 2 ⑨ Base 2
SVDMZ□□□□
SVINJM4559DS
1 2 3 4 5 6 7 8
2SB536, 2SD381
B C E
SVDBB113
5 4 3 2 1
SVITA7136P
1 2 3 4 5 6 7
2SA913, 2SC1913
2SD762
B C E
3SK74
1 2 3 4
1. ゲート 1
2. ゲート 2
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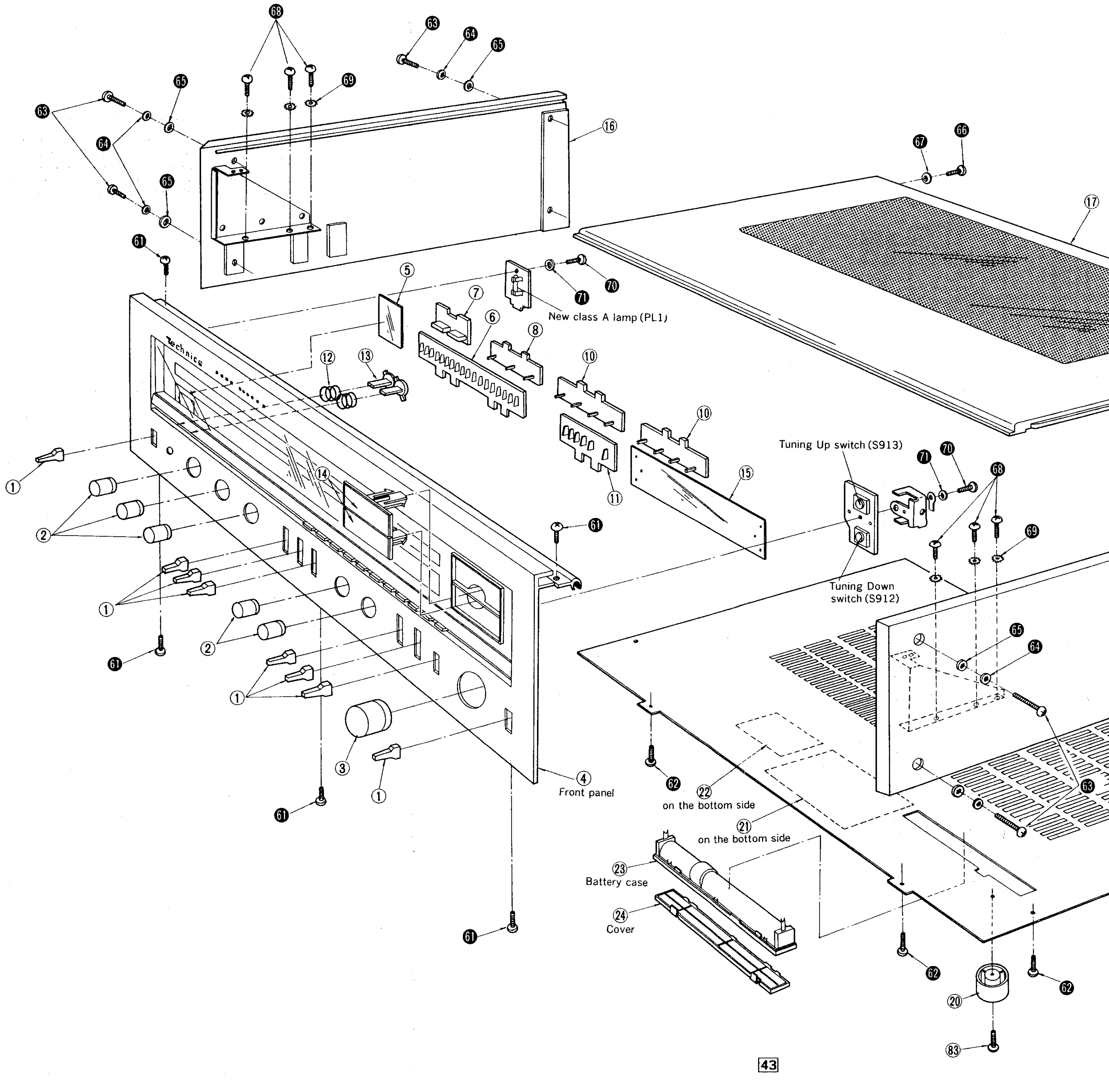
■ EXPLODED VIEWS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New class A lamp (PL1)
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Front panel
Tuning Up switch (S913)
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Tuning Down switch (S912)
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㉒ on the bottom side
㉑ on the bottom side
㉓ Battery case
㉔ Cover
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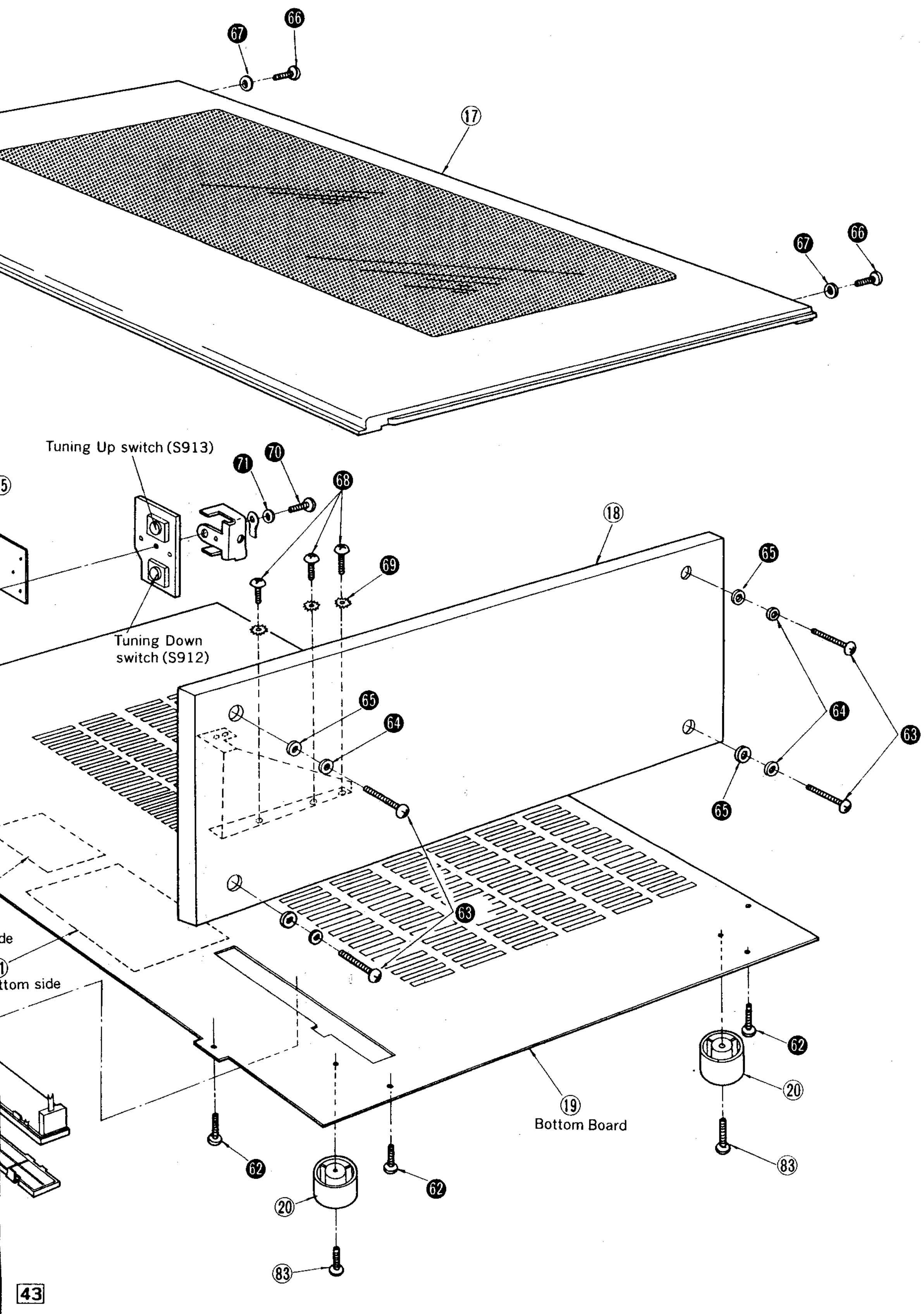
Tuning Up switch (S913)
Tuning Down switch (S912)
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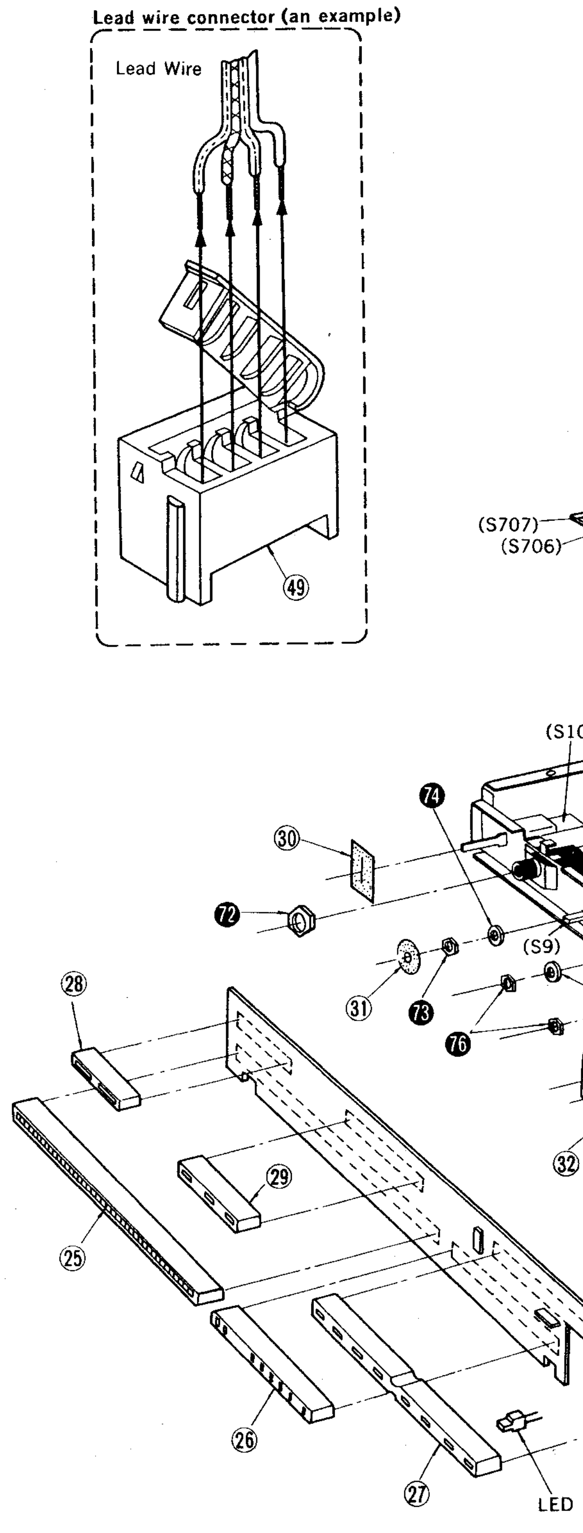
ttom side
Bottom Board


Lead wire connector (an example)
Lead Wire
49

(S707)
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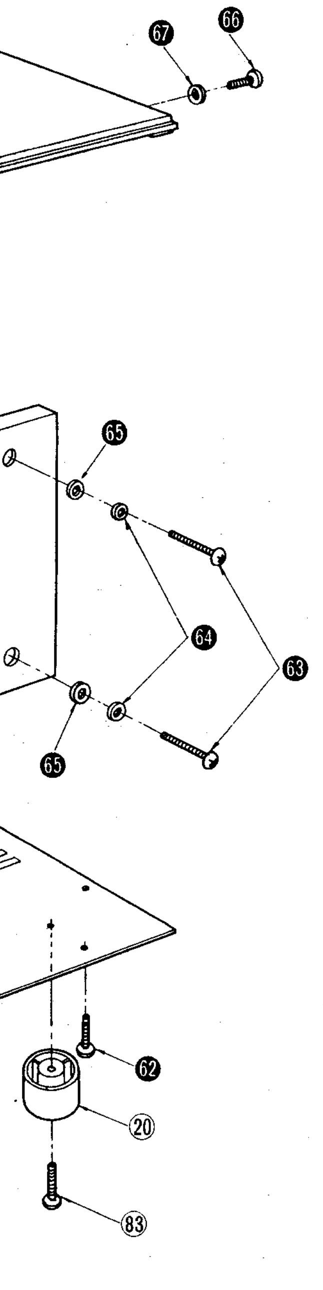
LED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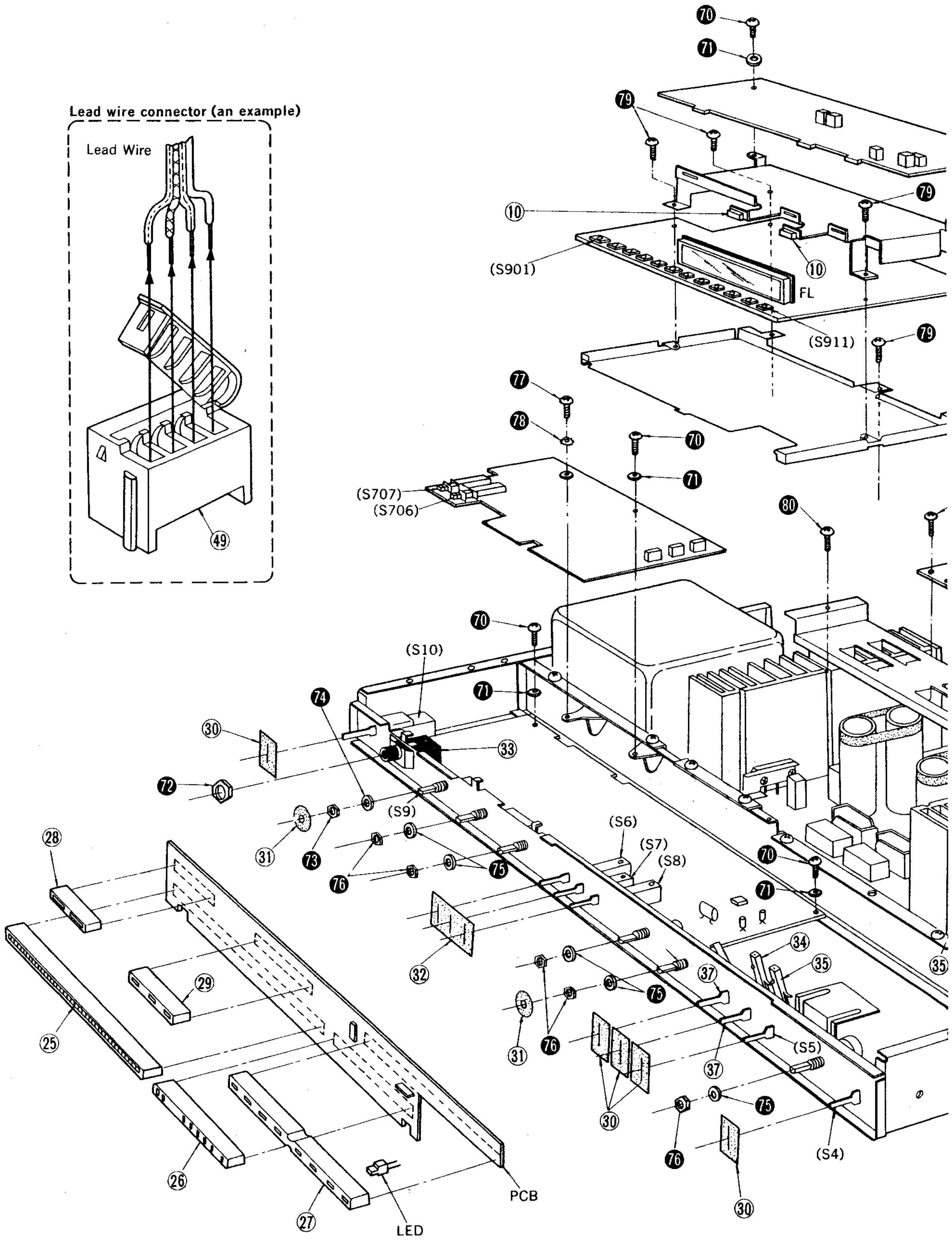
Lead wire connector (an example)
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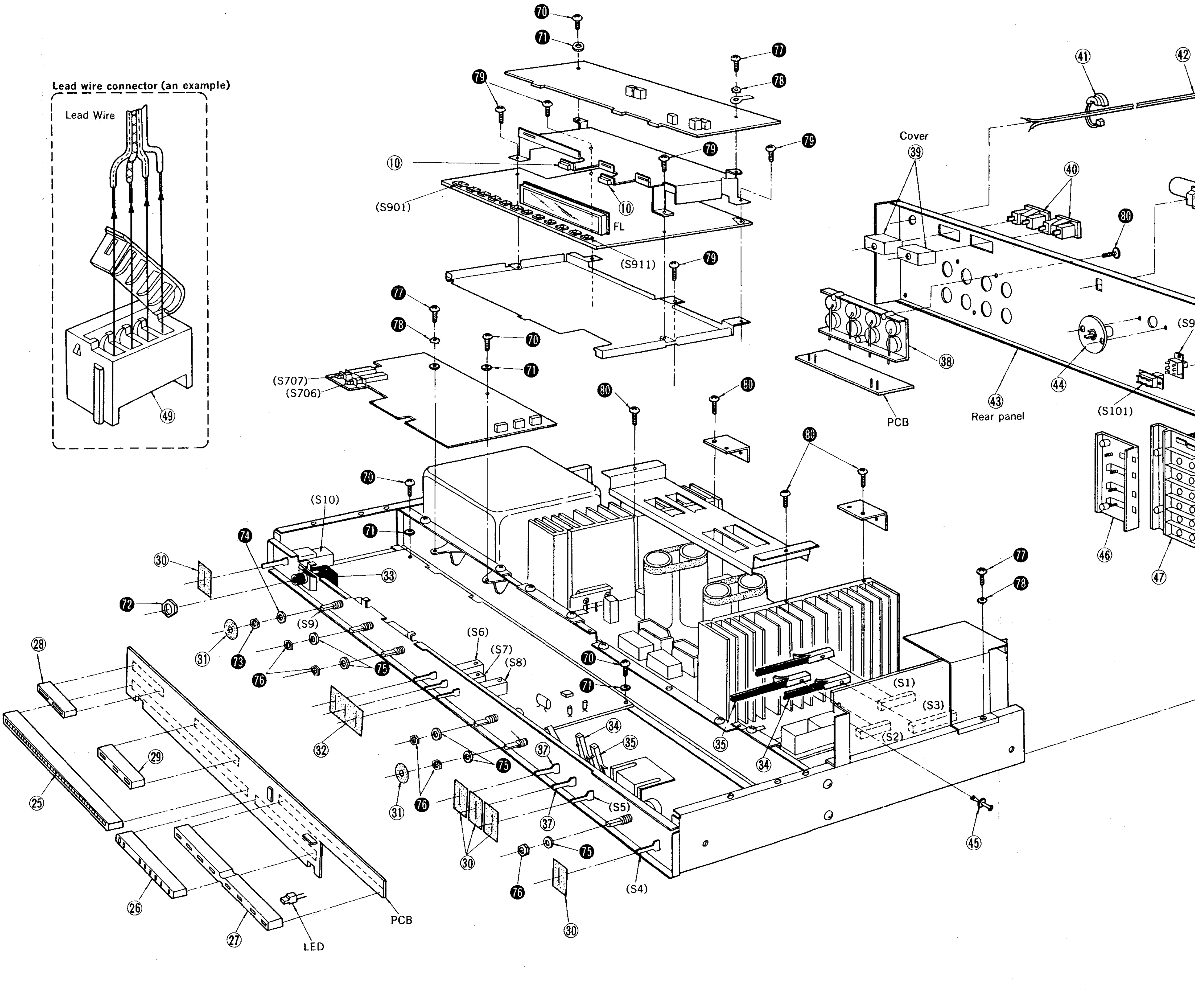
Lead wire connector (an example)
Lead Wire
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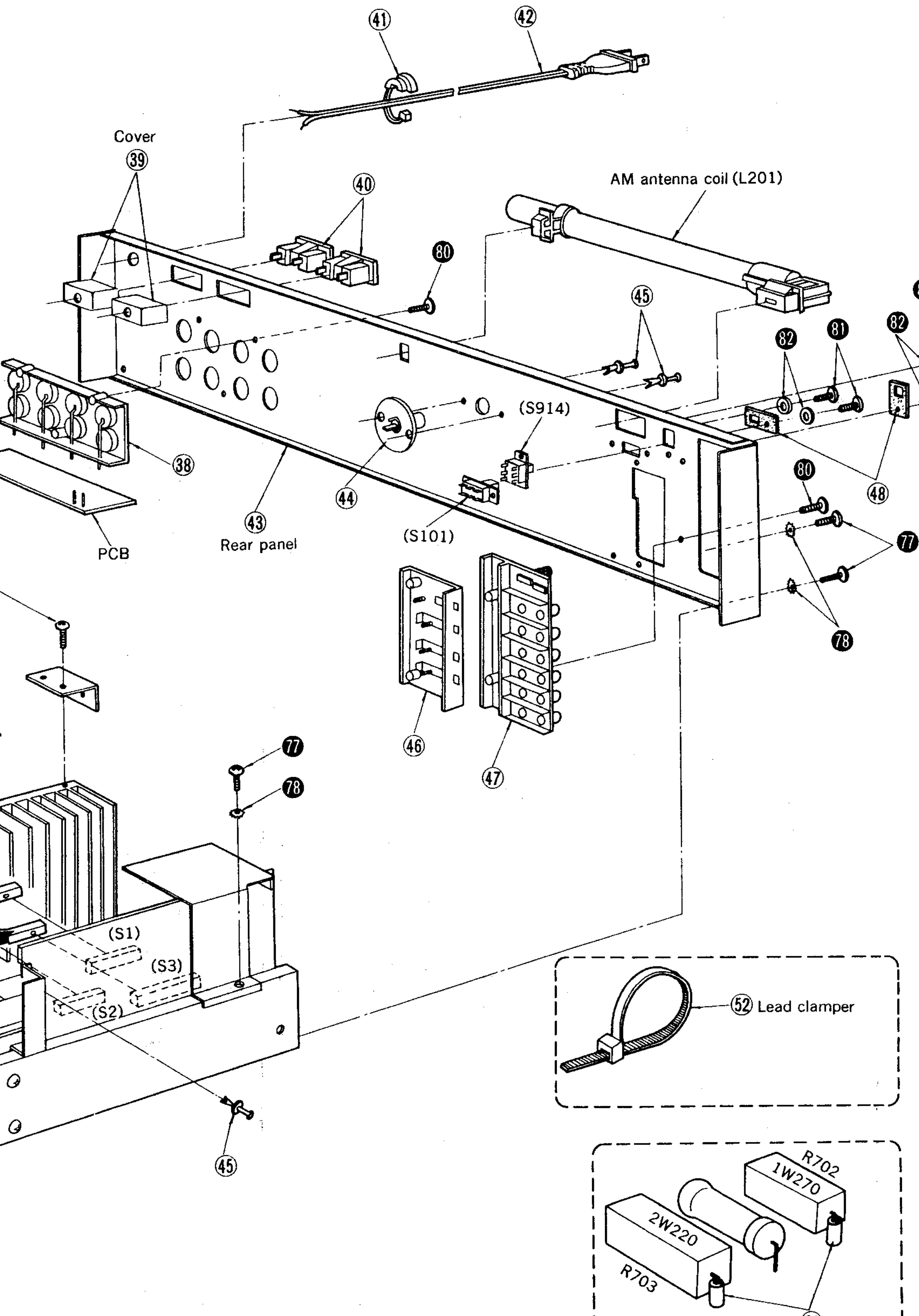

■ REPLACEMENT PARTS LIST.......Cabine

Notes: 1. Part numbers are indicated on most mechanical parts. Please use
2. ⚠ indicates that only parts specified by the manufacturer be us
3. Bracketed indications in Ref. No. columns specify the area. Part
used for all areas.

Ref. No.		Part No.	Part Name & Description
CABINET and CHASSIS PARTS			
1		SBD29	Knob, Lever Switches
2		SBN887–3	Knob, Tone Control/Balance/Selector
3		SBN885–5	Knob, Volume Control
4		SYW283	Panel, Front Ass'y
5		SDE255	Filter, New Class A Badge Light
6		SGL93	Light Guide, Power Level Indicator
7		SGL87	Light Guide, Protection/Safety Indicator
8		SGL89	Light Guide, Program Indicator
10		SGL91	Light Guide, Preset Station Indicator
11		SGL97	Light Guide, Signal Strength Indicator
12		SUS123–1	Spring, Push Switches
13		SBC205–3	Button, Push Switches
14		SBC275	Button, Tuning Up/Down Switch
15		SDU29	Filter, Display Window
16		SYK953	Side Panel, Left Ass'y
17		SYK951	Top Panel, Ass'y
18		SYK963	Side Panel, Right Ass'y
19		SKU8610	Bottom Board
20		SKX219–1	Foot
21		SQX4733	Label, Battery Caution
22		SQX4435–2	Label, Bottom Board Caution
23		SYE697	Case, Battery Ass'y
24		SJB9001	Cover, Battery Case
25		SHG1557	Bracket, Power Level Indicator LED
26		SHG1559	Cover, Signal Strength LED
27		SHG1561	Bracket Preset Station Indicator LED
28		SHG1565	Bracket, Protection/Safety Indicator LED
29		SHG1563	Bracket, Program Indicator LED
30		SHS2425	Fiber, Lever Switches
31		SHS6045	Fiber, Speaker/Selector
32		SHS2429	Fiber, Lever Switches
33		XCJ6P21B–A1	Jack, Headphones
34		ESA30227B	Wire, Remote Control, Rec Mode
35		ESA30225B	Wire, Remote Control, Tape Monitor
36		ESA3362B	Remote Control, With Wire, Selector Switch
37		ESA2268	Remote Control, Rec Mode/Tape Monitor
38		SJF4813	Terminal, Speakers
39		SMX13–1	Cover, AC Outlet
40	⚠	SJSA66–2	Socket, AC Outlet
41		SFHK040L	Bushing, AC Cord
42	⚠	**RJA9Y**	AC Cord
43		SGP2330B	Rear Panel
44		SJFA3101–1	Terminal, 4ch. MPX Output
45		SHR401–1	Latch, Terminal M'tg
46		SJF4419–2	Terminal, Antenna
47		SJF8023–2	Terminal, Input
48		SHR5073–1	Stopper, FM Antenna/Allocation Selector

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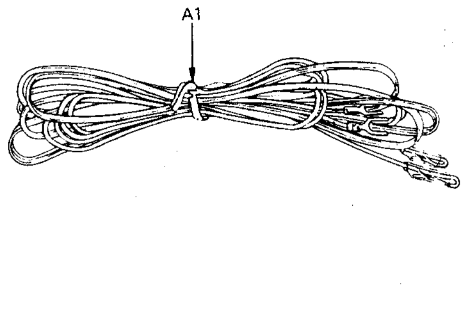
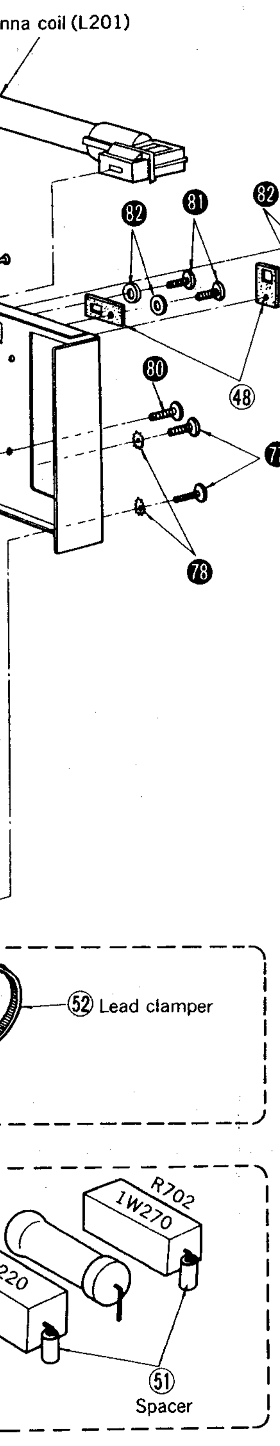
P5 [M

- **Accessory**





■ REPLACEMENT PARTS LIST....... Cabinet & Chassis Parts

Notes:
1. Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.
2. ⚠ indicates that only parts specified by the manufacturer be used for safety.
3. Bracketed indications in Ref. No. columns specify the area. Parts without these indications can be used for all areas.

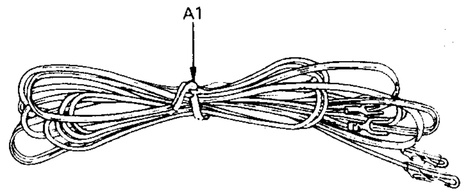
Areas

* [M] is available in U.S.A.
* [MC] is available in Canada.

Ref. No.		Part No.	Part Name & Description
CABINET and CHASSIS PARTS			
1		SBD29	Knob, Lever Switches
2		SBN887–3	Knob, Tone Control/Balance/Selector
3		SBN885–5	Knob, Volume Control
4		SYW283	Panel, Front Ass'y
5		SDE255	Filter, New Class A Badge Light
6		SGL93	Light Guide, Power Level Indicator
7		SGL87	Light Guide, Protection/Safety Indicator
8		SGL89	Light Guide, Program Indicator
10		SGL91	Light Guide, Preset Station Indicator
11		SGL97	Light Guide, Signal Strength Indicator
12		SUS123–1	Spring, Push Switches
13		SBC205–3	Button, Push Switches
14		SBC275	Button, Tuning Up/Down Switch
15		SDU29	Filter, Display Window
16		SYK953	Side Panel, Left Ass'y
17		SYK951	Top Panel, Ass'y
18		SYK963	Side Panel, Right Ass'y
19		SKU8610	Bottom Board
20		SKX219–1	Foot
21		SQX4733	Label, Battery Caution
22		SQX4435–2	Label, Bottom Board Caution
23		SYE697	Case, Battery Ass'y
24		SJB9001	Cover, Battery Case
25		SHG1557	Bracket, Power Level Indicator LED
26		SHG1559	Cover, Signal Strength LED
27		SHG1561	Bracket Preset Station Indicator LED
28		SHG1565	Bracket, Protection/Safety Indicator LED
29		SHG1563	Bracket, Program Indicator LED
30		SHS2425	Fiber, Lever Switches
31		SHS6045	Fiber, Speaker/Selector
32		SHS2429	Fiber, Lever Switches
33		XCJ6P21B–A1	Jack, Headphones
34		ESA30227B	Wire, Remote Control, Rec Mode
35		ESA30225B	Wire, Remote Control, Tape Monitor
36		ESA33628	Remote Control, With Wire, Selector Switch
37		ESA2268	Remote Control, Rec Mode/Tape Monitor
38		SJF4813	Terminal, Speakers
39		SMX13–1	Cover, AC Outlet
40	⚠	SJSA66–2	Socket, AC Outlet
41		SFHK040L	Bushing, AC Cord
42	⚠	**RJA9Y**	AC Cord
43		SGP2330B	Rear Panel
44		SJFA3101–1	Terminal, 4ch. MPX Output
45		SHR401–1	Latch, Terminal M'tg
46		SJF4419–2	Terminal, Antenna
47		SJF8023–2	Terminal, Input
48		SHR5073–1	Stopper, FM Antenna/Allocation Selector

Ref. No.		Part No.	Part Name & Description
49		SJS5627 SJS5421 SJS5327	Connector, Lead Wire, 6 pin Connector, Lead Wire, 4 pin Connector, Lead Wire, 3 pin
50		SHG1529	Cushion, FL, Rubber
51		SMX51	Spacer, Resistor (R702, 703)
52		SHR301	Lead Clamper
SCREWS, NUTS and WASHERS			
(61)		**XTB3+8BFZ**	Screw, Tapping, ⊕ 3 x 8 (Front Panel)
(62)		**XTB3+8BFN**	Screw, Tapping, ⊕ 3 x 8 (Bottom Board)
(63)		**XSN4+25BVS**	Screw, ⊕ 4 x 25 (Side Panel)
(64)		**XWA4BFZ**	Washer, Spring, ϕ 4
(65)		**XWG4FZ**	Washer, Plain, ϕ 4
(66)		**XTV3+8BFZ**	Screw, Tapping, ⊕ 3 x 8 (Top Panel)
(67)		**XWG3FZ**	Washer, Piain, ϕ 3
(68)		**XTB4+10BFN**	Screw, Tapping, ⊕ 4 x 10 (Side Panel)
(69)		**XWC4C**	Washer, External Toothed Lock, ϕ 4
(70)		**XTV3+10BFN**	Screw, Tapping, ⊕ 3 x 10 (P.C.B.)
(71)		**XWG3**	Washer, Plain, ϕ 3
(72)		**XNS12**	Nut, M12 (Headphone Jack)
(73)		**XNS9**	Nut, M9 (Speaker Selector)
(74)		**XWV9**	Washer, Spring, ϕ 9
(75)		**XWV8**	Washer, Spring, ϕ 8
(76)		**XNS8**	Nut, M8 (Volume/Balance/Tone/Selector)
(77)		**XTB3+8BFZ**	Screw, Tapping, ⊕ 3 x 8 (P.C.B.)
(78)		**XWC3B**	Washer, External Toothed Lock, ϕ3
(79)		**XTB3+8BFN**	Screw, Tapping, ⊕ 3 x 8 (Shield Cover)
(80)		**XTB3+10BFZ**	Screw, Tapping, ⊕ 3 x 10 (Chassis)
(81)		**XSN3+6BVS**	Screw, ⊕ 3 x 6 (FM Antenna/Allocation)
(82)		**XWA3BFZ**	Washer, Spring, ϕ 3
(83)		**XTB3+14BFN**	Screw, Tapping, ⊕ 3 x 14 (Feet)
ACCESSORY			
A1		SSA267	Cord, FM Indoor Antenna
PACKING PARTS			
P1		SPP655	Polyethylene Bag
P2		SPS2765	Pad, Left Side
P3		SPS2767	Pad, Right Side
P4 [M] only		SPG2639	Carton Box
P4 [MC] only		SPG2641	Carton Box
P5 [M] only		SQF10457–1	Instructions Book, Printed Matter
P5 [MC] only		SQF10459	Instructions Book, Printed Matter

• Accessory



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